OPIOIDS: USE WITH CAUTION

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Opioids for Acute and Chronic Pain

- Treating these two different populations should be very different
- Common features: “pain” some of the tools (opioids)
- I will focus on Chronic Opioid Analgesic Therapy primarily
Chronic Pain

- A leading cause of visits to a doctor, disability
- Costs the US economy more than $100 billion/year
- Many etiologies, many treatments
- Appropriate treatment often focused on
  - Decreasing pain and suffering
  - Improving function
  - Fostering self-management
  - Enhancing control
- One tool amongst many is the use of opioids...
Opioids

- *Can* relieve all types of pain, not replaceable for acute and cancer pain
- Available by many routes of administration: oral, TD, IV, epidural, intrathecal, buccal, rectal, etc
- Multiple formulations: short acting, long acting, abuse-deterrent, combination, mixed-agonists, “atypical”
- Huge dose range
- No consensus on use
- May not benefit many chronic pain patients
- **BONUS:** can be abused, have street value, the DEA and states monitor use, special rules, kill people, may promote pain, many biases, etc
A Flood of Opioids, a Rising Tide of Deaths

Susan Okie, M.D.

November 18, 2010

Four plaintiffs accuse Vancouver pain clinic of medical malpractice, alleging 'excessive amounts' of opiates prescribed

Published: Monday, January 10, 2011, 9:57 AM  Updated: Monday, January 10, 2011, 3:16 PM

By Maxine Bernstein, The Oregonian

Four plaintiffs have filed a wrongful death and medical malpractice lawsuit against a Vancouver pain clinic, alleging it prescribed excessive amounts of drugs that caused multiple overdose deaths and addictions.

The estates of Deborah E. Reid, who died of opiate intoxication Jan. 8, 2008, and Karen Stransky, who died May 30, 2009 of an opiate overdose, are two of the plaintiffs suing the Vancouver Payette Clinic in Clark County Circuit Court.

Malvina Goetz and Tina Wright, two other plaintiffs, allege the clinic prescribed them "grossly excessive" amounts of controlled substances, causing each physical and mental injuries.

Payette Clinic practitioners knew or had reason to know that the massive quantities of controlled substances they were prescribing were either being diverted by patients and sold in the illegal drug market.

Opioid Pain Contracts Can Damage Patient Trust, Bioethics Panel Says

January 10, 2011

News Summary

A group of physicians and experts on pain policy have published an article arguing that while opioid treatment contracts between patients and their physicians can be useful, they can be harmful for the patient-physician relationship unless presented in the right way, according to American Medical News, reported Dec. 27.

Doctors use the agreements -- also known as "pain contracts" -- to warn patients not to give away or sell their prescription pills. According to American Medical News, other physicians treating patients for pain have undergone "high-profile prosecutions," and
Drug poisoning mortality: rate and frequency by year and select drug type, Oregon, 1999-2008

Oregon Public Health Division - Injury Prevention Program

*2008 mortality data are preliminary; drug death categories are not necessarily mutually exclusive - deaths may involve multiple drugs. Includes unintentional and undetermined drug poisonings. Data source: Oregon Center for Health Statistics mortality data file.
Opioid Myths

- Pain medicine = narcotics = opioids
- Strong opioids work the best
- Quick acting is better
- Only opioids *really* work for pain
- More is better
- “Oxy” is the best
- “It’s just Vicodin®”
- “My narcotics work well for my fibromyalgia”
More opioid myths
Opioids do not

- Eliminate pain
- Take away problems
- Provide normal sleep for most people
- Motivate a patient to participate in activity
- Make everything better
- Simplify treatment
What is being treated?

- Pain
- Suffering
- Distress
- Depression
- Anxiety
- Personality issues
- Sleep disturbance
- Progressive vs Stable
- Continuous vs. intermittent pain
- Deconditioning/Obesity
- Work issues
- Family issues
- Limited coping skills
- Stress
Balancing Treatment: very few patients have complete pain relief

**Psychological Treatment:**
CBT, Self Management, Acceptance, Control

**Medical:**
Medication Intervention
Coordination Reinforcement

**Rehabilitation:**
Improve function
Overcome deconditioning
Self exercise
Pacing

Everything else: insurance, work, disability, family, leisure, meaning

Opioids
Opioids and chronic pain

- **10-20 years ago:** an interesting, controversial, unproven concept

- **Now:** an interesting, controversial concept with some data to support it

- Many studies of 1-3 months duration show benefit.

- **IS THAT LONG ENOUGH?**
Neuropathic Pain – The Case for Opioid Therapy

Stephen C. Allen
Royal Berkshire Hospital, Reading, UK

Efficacy of Opioids for Chronic Pain
A Review of the Evidence

Jane C. Ballantyne, MD, FRCA and Naomi S. Shin, BA

Prolonged-release oxycodone enhances the effects of existing gabapentin therapy in painful diabetic neuropathy patients

Magdi Hanna a,*, Cathy O’Brien b, Margaret C. Wilson c

Opioid Endocrinopathy in Women Consuming Prescribed Sustained-Action Opioids for Control of Nonmalignant Pain

Harry W. Daniell, MD, FACP
Department of Family Practice, University of California, Davis Medical School, Redding, California.

Topical review

Opioid-induced abnormal pain sensitivity: implications in clinical opioid therapy

Jianren Mao a

Predicting long-term response to strong opioids in patients with low back pain: findings from a randomized, controlled trial of transdermal fentanyl and morphine

Eija Kalso a, Karen H Simpson b, Robert Slappendel c, Joachim Dejonckheere d and Ute Richarz e,*

The Addiction Behaviors Checklist: Validation of a New Clinician-Based Measure of Inappropriate Opioid Use in Chronic Pain

Stephen M. Wu, PhD, Peggy Compton, RN, PhD, Roger Bolus, PhD, Beatrix Schieffer, PhD, Quyah Pham, MD, Ariel Baia, MSN, Walter Van Vort, MD, Frederick Davis, MD, Paul Shekelle, MD, and Bruce D. Nahin, PhD
Editorial

*Not so fast:* The reformulation of fentanyl and breakthrough chronic non-cancer pain

Available online at www.sciencedirect.com

Drug and Alcohol Dependence 81 (2006) 103–107

Commentary

Major increases in opioid analgesic abuse in the United States: Concerns and strategies

LETTERS TO THE EDITOR

Is Actiq Use in Noncancer-Related Pain Really “A Recipe for Success”?
Do opioids help back pain patients work?

Washington state: prospectively examined opioids prescribed within 6 weeks of the first medical visit for a back injury among 1843 workers with lost work-time claims.

- After adjustment for pain, function, injury severity, and other baseline covariates, receipt of opioids for more than 7 days (odds ratio = 2.2; 95% confidence interval, 1.5-3.1) and receipt of more than 1 opioid prescription were associated significantly with work disability at 1 year.¹

Utah workers comp: retrospectively identified nonspecific back pain patients, looked for opioid vs no opioids

- Odds of chronic work loss 6 times greater with CII opioids
- Odds 11-14 times greater for any opioids prescribed ≥ 90 days
- “for most workers opioid therapy did not arrest the cycle of work loss and pain.”

Potential Shared Goals

- Establish the goals of treatment:
  - Decrease pain (intensity, frequency)
  - Decrease suffering
  - Enhance self control
  - Improve function
  - Improve sleep
  - Improve mood/decrease distress
  - Prevent pain (prophylaxis)
  - Increase activity (work, recreation, etc)
  - Minimize iatrogenic complications
Initiating opioid therapy

- GO to the DEA website and your state medical board website, familiarize yourself with the rules.
- DOCUMENT the history, physical, prior treatments, and your medical decision making
- Assess patient risk for diversion: an assessment tool or system of questions
- Use consent form, document a PARQ discussion:
  http://egov.oregon.gov/BME/PDFforms/MaterialRiskNotice.pdf
- Consider a behavioral agreement
- Outline goals
- Outline other treatment: pharmacotherapy, other
- Consult with other providers if needed
- Document that the medication will be stopped if no meaningful response
- Consider urine toxicology

An excellent guideline: Canadian Guideline for Safe and Effective Use of Opioids For Chronic Non-Cancer Pain.
http://nationalpaincentre.mcmaster.ca/opioid/index.html
Furlan AD, et al. CMAJ. 2010 June 15; 182(9): 923–930
A couple of details

- Your friend: The DEA = Drug Enforcement Agency, they don’t approve, they regulate
- Schedule II: potent opioids. No refills.
- Schedule III: opioids with something else attached. Refills allowed.
- You must have a DEA registration, specific for your state.
- PLUS: your state has a host of additional rules, guidelines and suggestions for you
Drug Selection, my version

Chronic Opioid Analgesic Therapy

Two options:

- Intermittent, as needed.
  - Tally the use
  - Consider conversion to long acting
  - Stay with short acting if dose is low or truly intermittent

- Start with time contingent dosing of sustained release opioid.
  - Low dose
  - Adjust
The Opioid Agonists

- **Short acting**
  - Pure opioids: oxycodone, hydromorphone, morphine, oxymorphone, codeine, fentanyl
  - Mixed: hydrocodone/apap, codeine/apap, etc

- **Long acting**
  - Methadone
  - Oxycodone, hydromorphone, TD fentanyl, morphine, oxymorphone

- **Orphan drug:** levorphanol

- **Opioid +:** tapentadol, tramadol

- **Abuse-deterrent formulations:** Embeda® (morphine and naltrexone)
Selecting an Opioid

- No “best” opioid
  - Fentanyl: generic patch, buccal tablet, film, and oralet
  - Sustained release hydromorphone, oxymorphone
  - Several morphine preparations
  - Office based addiction treatment: Suboxone (buprenorphine and naloxone)
  - Methadone: a leading cause of opioid death in my home state
  - Hydrocodone most likely to be diverted
  - Tapentadol: norepinephrine and opioid actions
  - Tramadol: not scheduled, many interactions
Route

- **Oral:** least expensive, most options, usually the first choice
- **Transdermal:** a reasonable alternative
- **IV:** rarely appropriate for chronic nonmalignant pain
- **Buccal:** rarely appropriate for chronic nonmalignant pain, high diversion/abuse potential
Long Acting Opioid starting doses

- Methadone: “special” 2.5 mg BID. Warn patients about long ½ life. Must be stable for many days before adjusting.
- Oxycodone SR: 10 mg BID
- Morphine SR: 15 mg BID or 20 mg QD
- Fentanyl patch: 12 mcg/hr
- Hydromorphone SR: 8 mg/day
- Oxymorphone: not suggested as first, second, or third choice
Methadone

- Variable elimination half life: 8 to 60 hours
  - Liver function critical
- Half life much longer than analgesic half-life
- Beyond the mu receptor: norepinephrine and serotonin reuptake inhibition, NMDA antagonist
- May produce
  - Less tolerance
  - Better analgesia in neuropathy
  - Less constipation
- Other special features: QT prolongation, very dependent on liver metabolism, A LEADING CAUSE OF OPIOID-RELATED DEATH, especially in the first week of use

Morphine

- Available in many forms
- Active metabolites
- Standard starting opioid for intrathecal delivery “morphine pump”
- Spinal and supraspinal actions
- Histamine release primarily with rapid IV administration
- Embeda® (morphine and naltrexone): when to use it?
Morphine CR v. Oxycodone CR

- Few head-to-head studies
- Oxycodone may produce less need for rescue
- More nausea & vomiting with morphine
- Caveat: many morphine preparations

**Figure 2** Mean daily number of rescue analgesic IRM (10 mg) at the end of each week. The weekly IRM consumption was higher in patients having CRM compared to patients having CRO (P < 0.05). Morphine values: 2(0–2.5); 2(0–3); 2(0–2); 2(1–3). Oxycodone values: 1(0–3); 0.5(0–2); 1(0–2); 1(0–1.5).

Lauretti GR. BJ Cancer 2003;89:2027-30
Duragesic® fentanyl patch

- Generics are different
- Possibly less constipation
- Slow onset
- NOT FOR ACUTE PAIN
- Duration 72 hours for most but not all
- Skin condition and temperature influence delivery
- Abuse not easy
- TD fentanyl: no effect on balance, driving performance, cognition Menefee LA. et al Pain Medicine 2004

Fig. 1. Cross-section of a transdermal fentanyl delivery system (from Janssen Pharmaceutica, with permission).

Cornick CA. Drug Safety 2003;26:951-73
Meperidine

- Mainly μ-agonist; moderate affinity for κ and δ receptors.
- Weak local anesthetic activity (alter nerve conduction).
- Greater antishivering effect than other opioids by unclear mechanisms. Effectively terminates or attenuates shivering from diverse causes: general and epidural anesthesia, fever, cold, and transfusion reactions.
- Accumulation of normeperidine produces signs of CNS excitation (seizures).
Tramadol

- Structurally related to codeine and morphine.
- Consists of two enantiomers:
  - (+)-Tramadol and the metabolite (+)-O-desmethyl-tramadol (M1) are agonists of the μ- opioid receptor.
  - (+)-Tramadol inhibits serotonin reuptake and (-)-Tramadol inhibits norepinephrine reuptake.
- After oral administration, tramadol is rapidly and almost completely absorbed. Plasma protein binding is about 20%. The mean elimination half-life is about 6 hours.
- It’s considered a weak opioid: analgesic potency is about 10% of that of morphine.
- Appears to produce less constipation and dependence than equianalgesic doses of strong opioids.
- Serotonin syndrome
  - Results from excessive activation of serotonin receptors in the nervous system, on the surface of platelets, and on the vascular endothelium. The clinical manifestations are a triad of altered conscious state, autonomic dysfunction, and neuromuscular excitability. Meperidine, tramadol, methadone, dextromethorphan and propoxyphene appear to be weak serotonin re-uptake inhibitors and have all been involved in serotonin toxicity reactions with MAOIs and serotoninergic antidepressants.
- Sustained release, combination, short acting forms available
Oxymorphone

- Semi-synthetic opioid derived from thebaine
- Approximately 6–8 times more potent than morphine (or 3 times more potent?)
- Endo Pharmaceuticals markets oxymorphone in the United States as Opana and Opana ER
- Opana is available as 5 mg and 10 mg tablets; Opana ER, an extended-release form, is available as tablets in strengths of 5 mg, 10 mg, 20 mg, and 40 mg.
- Food Effect Two studies examined the effect of food on the bioavailability of single doses of 20 and 40 mg of OPANA ER in healthy volunteers. In both studies, after the administration of OPANA ER, the Cmax was increased by approximately 50% in fed subjects compared to fasted subjects. A similar increase in Cmax was also observed with oxymorphone solution.
Tapentadol vs Oxycodone

Tapentadol: opioid agonist and norepinephrine reuptake inhibition, CII

- LBP randomly assigned to tapentadol 50 or 100 q4-6 hr or oxycodone 10 or 15 mg q 4-6 hr, 90 days
  - Low completion rates: 57.6% vs 50.6%
  - Nausea, vomiting, constipation: 44.2% vs 63.5%
  - Pain relief, nervous system side effects similar

Opioid Adverse Effects

- **Respiratory depression**: variable, additive with other sedatives, tolerance develops
- **Constipation**: persists. New treatments: opioid antagonists (separate or combined with opioid)
- **Sedation/mental status changes**: variable, tolerance may develop.
- **Sleep**: emerging evidence of abnormal sleep, increased sleep apnea
- **Tolerance, physical dependence, abuse/addiction**
- **No organ damage**: renal, hepatic, hematopoetic, coagulation systems.
- **Persistent pain, increased pain, hyperalgesia**
Endocrine System

TABLE 3: Diagnosis of opioid-induced endocrinopathy

- Clinical evaluation
  - Symptoms (Table 2)

- Laboratory evaluation
  - Free and total testosterone
  - Consider gonadotropins
  - Consider sex hormone binding globulin

- Rule-out other causes
  - Idiopathic hypogonadism
  - Free and total testosterone
  - Sex hormone binding globulin
  - Pituitary-hypothalamic gland failure
  - Tumors
  - Trauma
  - Radiation therapy
  - Corticosteroid therapy

TABLE 4: Management of opioid-induced hypogonadism

- Consider opioid rotation
- Consider strategies that allow opioid dose reduction
  - Concomitant non-opioid analgesics
  - Non-pharmacologic modalities

- Testosterone supplementation
  - Consider consultation with an endocrinologist
  - Choose formulation and dose
    - Intramuscular injection
    - Transdermal patch
    - Transdermal gel
  - Monitor prostate specific antigen (PSA) in males
  - Monitor clinical and laboratory results
Opioid Tolerance

- Can occur quickly with all opioids
- Can persist after opioid tapered and stopped
- Mechanisms still not understood
  - NMDA Receptor
  - Uncoupling Internalizing Receptor
  - NO
- Tx: opioid rotation, ketamine, nitroglycerine, alternative analgesics

Risk assessment

- Two ways of looking at this
  - Identify patients who won’t have improved pain control or function
  - Identify patients at risk for misuse
  - BOTH important

- Risk for ongoing pain, low level of function:
  - High levels of pain, ill defined goals, pre-pain mental illness, limited coping, legal issues, severely compromised function, cigarette use, limited social support, DUI, other drug abuse history, multiple pain sites, etc
Risk assessment for misuse

- Likely increase risk of inappropriate use:
  - Alcohol, illicit drug, or cigarette abuse; uncontrolled anxiety or depression; younger; previous drug or DUI conviction; doctor shopping, family history of substance abuse

- Concerning history:
  - Unauthorized dose escalation, minimal responsiveness to dose adjustment, more than one source, focus on meds, marginal compliance, early refills, helps with stress or sleep, etc

- Women and men different: women more likely to misuse related to mood, men for legal/behavioral reasons\(^1\)

“It’s just a little marijuana...”

- Recent review of literature looking at cannabis and opioids¹
  - cannabis use among patients prescribed chronic opioid therapy in these studies ranged from 6.2% to 39%, compared with 5.8% in the general United States population
  - statistically significant associations with present and future aberrant opioid-related behaviors.
- Plus: still against federal law

After first prescription

- Assess: compliance, response, adverse effects, mood, participation in treatment, aberrant behaviors
- Document: ongoing care, all of the above, exact prescription details
- Discuss driving, other activity, function
- See the patient regularly
- Review treatment goals
- Perform history & physical exam on a regular basis
- Consider urine toxicology testing
- Only adjust dose with a visit and re-assessment
- No unscheduled refills
- Utilize adjuvant treatments
- Discuss inconsistencies
- **Stop futile therapy!**
Cluster 3: Monitoring Long-Term Opioid Therapy (LTOT)

<table>
<thead>
<tr>
<th>No.</th>
<th>Recommendation</th>
<th>Keyword</th>
</tr>
</thead>
<tbody>
<tr>
<td>R12</td>
<td>When monitoring a patient on long-term therapy, ask about and observe for opioid effectiveness, adverse effects or medical complications, and aberrant drug-related behaviours. (Grade C).</td>
<td>Monitoring LTOT</td>
</tr>
<tr>
<td>R13</td>
<td>For patients experiencing unacceptable adverse effects or insufficient opioid effectiveness from one particular opioid, try prescribing a different opioid or discontinuing therapy. (Grade B).</td>
<td>Switching or discontinuing opioids</td>
</tr>
<tr>
<td>R14</td>
<td>When assessing safety to drive in patients on long-term opioid therapy, consider factors that could impair cognition and psychomotor ability, such as a consistently severe pain rating, disordered sleep, and concomitant medications that increase sedation. (Grade C).</td>
<td>LTOT and driving</td>
</tr>
<tr>
<td>R15</td>
<td>For patients receiving opioids for a prolonged period who may not have had an appropriate trial of therapy, take steps to ensure that long-term therapy is warranted and dose is optimal. (Grade C).</td>
<td>Revisiting opioid trial steps</td>
</tr>
<tr>
<td>R16</td>
<td>When referring patients for consultation, communicate and clarify roles and expectations between primary-care physicians and consultants for continuity of care and for effective and safe use of opioids. (Grade C).</td>
<td>Collaborative care</td>
</tr>
</tbody>
</table>

Furlan AD, et al. CMAJ. 2010 June 15; 182(9): 923–930

http://nationalpaincentre.mcmaster.ca/opioid/index.html
The Four A’s

- **Analgesia**: does the patient have effective pain relief?
- **Adverse effects**: are they severe, limiting, or are they controlled?
- **Activity**: evidence of increased function with opioids? meeting activity goals?
- **Aberrant Behavior**: screen/monitor
Stopping Opioid Therapy

- Compliant patient with flat dose response curve or intolerable side effects or pain improved by other means
  - Taper slowly
  - Document

- Noncompliant therapy
  - Document
  - Offer resources
  - Either stop abruptly or quick taper
  - Notify others involved in patient care
Factors Favoring Prescription Drug Abuse

- Characteristics desired in drug of abuse
  - Rapid onset
  - Brief duration
  - High lipophilicity
  - Solubility or vaporization potential
  - “Feel it work”

- PROTOYPE: heroin

- Prescriber practices that might favor abuse
  - Symptom contingency (prn)
  - “Pseudoaddiction” (inadequate treatment, leading to further efforts to procure effective treatment)
  - Poor patient selection and/or monitoring
  - Poor documentation
  - Not questioning
Urine Tox Screens

- Often suggested by review articles/experts
- Turn up “abnormal” up to 45% of the time
  - Prescribed medication absent
  - Illegal substances
  - Extra prescribed medications
  - Altered sample
  

- Should be random, quantitative, done the same way every time
- Baseline before first prescription?
- Point of care vs lab?
- Know in advance what you will do with the results

Barriers to good practice

- Physicians and other prescribers:
  - Not enough time to assess patients fully, reimbursement
  - No easy system to assess patients fully
  - Not aware of alternatives to opioids, how to use them effectively; inadequate use of mental health, rehabilitation services
  - Not assessing contributing and risk factors
  - Short horizon for assessing effect of treatment
  - Educational deficits
  - Inadequate treatment of acute pain to prevent development of chronic pain

- Patients:
  - Insurance barriers to effective alternative treatments
  - Desire for “quick fix”
  - ETC
Barriers to good practice

- No clear guidelines of what to do with problematic patients
  - Misuse to treat distress– how to manage
  - Addiction problem– deficient resources
  - Drug trafficking– what does a provider, pharmacist do?
  - Prescription fraud– what does a provider, pharmacist do?
  - Doctor shopping– how to stop this inefficient use of resources?
Acute Pain

- Trauma, surgery, injuries
- Familiar to all
- Can serve a purpose
- Tends to resolve
- Cause often obvious
- Treatments may be curative
- Rest often helpful
Every Surgical Procedure

- Cuts nerves
- Cuts tissues
- Induces the injury response
- Alters peripheral and central nervous system pain processing
- Can cause chronic pain

In general: severity of postop pain correlates with risks of chronic pain
Postoperative Pain: Patients’ Perspective

National surveys of surgical patients:
- 70-80%: moderate to extreme postop pain
- 75%: continued pain after medication
- More with pain AFTER discharge
- 25%: medication side effects

Warfield & Kahn, Anesthesiology 1995
Apfelbaum JL et al, Anesth & Analg 2003

Patients willing to pay for better pain control, esp if they experienced poor pain control previously

Badner, Can J Anaesth 1997;
vан den Bosch JE et al, Anesthesiology 2006

Pain lasts for weeks to months and impacts recovery

VanDenKerkhof EG, Pain Res Manag 2006
Peripheral Sensitization

Tissue damage → Inflammation → Sympathetic terminals

SENSITIZING “SOUP”

- Hydrogen ions
- Noradrenaline
- Bradykinin
- Histamine
- Potassium ions
- Prostaglandins
- Purines
- Cytokines
- 5-HT
- Leukotrienes
- Nerve growth factor
- Neuropeptides

Decreased threshold of nociceptors
Ectopic discharges
Abnormal accumulation of Na⁺ channels

Adapted from Siddal, Cousins. In: Cousins, Bridenbaugh, eds. Neural Blockade. 1998:675
Mapping the area of punctuate mechanical hyperalgesia around the incision as a tool to assess postoperative central sensitization.

Figure 1 from "Intraoperative Epidural Analgesia Combined with Ketamine Provides Effective Preventive Analgesia in Patients Undergoing Major Digestive Surgery," by Lavand'homme et al., pp. 813-820.
Hyperalgesia Predicts Chronic Pain

Eisenach JC RAPM 2006

Fig 1. Relationship between area of hyperalgesia to mechanical stimulation with a von Frey filament 48 hours after abdominal surgery (primarily colectomy) and residual pain 6 months later.5,7,8
Persistent Postoperative Pain: 10-50% of surgery patients with severe pain in 2-10%

- Thoracotomy: 30-60%*
- Inguinal Hernia Repair: 6-11%\(^1,2\)
- Extremity Amputations
- Cardiac Surgery
- Breast Surgery, especially with dissection
- Spinal Surgery
- Orthopaedic Surgery
- Abdominal Surgery
- Hysterectomy

Prospective Study

- 625 patients, mixed surgical procedure.
- Many variables collected
- At 6 months, patients with high levels of pain on postop day #4 and surgery longer than 3 hours:
  - More pain
  - More functional restrictions
  - Poor “global recovery”
  - Worse quality of life

Chronic pain starts as acute pain

- Some of these same mechanisms have been identified in chronic pain patients
- Poorly controlled postop pain is an identified risk factor for chronic pain
- Does better postop pain control lead to less chronic pain?
Enlightened Acute Pain Treatment

Goal is to decrease pain and adverse physiology associated with trauma

- Multimodal treatment initiated early is most likely to be successful
- Requires a collaborative effort, continuous assessment, planning
- Must be individualized
Patient assessment

- **Chronic Pain** -- Increased opioid requirements & pain
- **Substance abuse** -- increased opioid requirements by Stacey Anesth 1990
- **Background Stress** -- Delayed recovery, increased pain, increased morbidity by Liu Anaesthesia 1994
- **Neuropathic Pain** -- May be resistant to opioids
- **Sleep Apnea** – Increased risk for resp depression by Blake DW, et al. Anaesth Intensive Care. 36(3):379-84, 2008 May
Postoperative pain predictors

- Knee surgery: preoperative experimental pain associated with postop pain with movement  
  Werner MU et al *Anesthesiology* 2004

- Abd surgery postop pain risks: preop pain, depression, anxiety, severity of illness, lack of multimodal tx  
  Caumo W et al *Acta Anaesthesiol Scan* 2002

- Gyn surgery: psychosocial factors associated with postop pain and morphine dosage. Preop pressure pain correlates with postop pain  

- Patients who predict more pain have more pain and opioid use.  
  Logan DE & Rose JB *J Pediatr Psychol* 2005
Predictors, continued


- Cholecystectomy: acute postop pain predicts chronic pain (~10% 1 yr later) Bisgaard T et al *Scand J Gastroenterol* 2005

- Hernia repair with mesh: postop pain, younger age, and numbness associated with chronic pain. 43% had pain, 14.5% severe Nienjuijs SW et al *J Am Coll Surg* 2005

- Spine surgery: altered HPA axis and cytokines associated with ongoing pain Geiss A et al *Pain* 2005
Perioperative Multimodal Analgesia

Minimally invasive surgery along with:

- Neural Blockade or other local anesthetic
- NSAID/COX-2 Inhibitor/Acetaminophen/Steroid
- Gabapentin/Pregabalin
- NMDA antagonist
- Clonidine
- Recovery/rehabilitation plan

Together, these interventions can reduce immediate postop pain, facilitate recovery, and possibly reduce chronic pain

One option for reducing opioid prescriptions

- “Multimodal analgesia” for surgery and trauma:
  - Regional anesthesia, continued after surgery
  - Anti-inflammatories
  - Anesthetic adjuvant medications
  - If possible, minimally invasive surgery

- This approach decreases pain, decreases chronic pain, decreases opioid need
Another option for reducing opioid prescriptions

- Comprehensive Pain Treatment
  - Physical therapy, exercise
  - Coping skills, relaxation
  - Address work, health issues that impact pain
  - Pain relieving procedures
  - Nonopioid medication (an example, a nonopioid just approved for chronic musculoskeletal pain)
  - Re-assess utility of opioid prescriptions
What I really do/believe

- I advocate aggressive multimodal analgesia for postop pain to promote recovery, avoid chronic pain, and minimize opioids
- I use opioids in a minority of chronic pain patients
- I focus on treating the baseline pain
- I work on strategies to reduce distress
- I rarely focus on pharmacological treatment only
- My pharmacological approach is polypharmacy, not reliance on opioids alone
- I minimize use of short acting medications and medications with “street” appeal
- I believe that higher doses of opioids are associated with less good outcomes, more adverse effects, therefore I focus on strategies to avoid tolerance and dose escalation
Thank you!