Management of Chronic Pain: A Case-based Approach

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What American's Know About Science

• H2O is Hot Water, CO2 is Cold Water

• Water is composed of two gins, oxygen and hydrogen. Oxygen is pure gin and Hydrogen is gin & water.

• Three kinds if blood vessels: arteries, veins and caterpillars.

• Gonads are a tribe of wondering desert people.

• How does one keep milk from turning sour, keep it in the cow.
Objectives

- Explore chronic pain management through a case-based approach.
- Define multimodal care.
- Evaluate outcomes of care.
Pain – Impact on Society

Primary reason people see a doctor

Number 1 reason people out of work

Affects > 50 million Americans

Indirect/direct medical expenses $200B

Quality of life

• Impaired activities of daily living
• Fatigue
• Mood changes – depression, anger
• Cognitive impairment – correlates with brain changes

Suffering
Institute of Medicine 2011

- A Moral Imperative
- Chronic pain can be a disease in itself
- Value of comprehensive treatment
- Interdisciplinary approaches / Prevention
- Wider use of existing knowledge
- Roles for patients and clinicians
- Value of public health and community-based approach.
Division Pain Medicine, Stanford University Medical Center

- 21 Clinical & Research Faculty
- 8 Voluntary Clinical Faculty
- 8 ACGME Clinical Fellows
- 2 Clinical Psychology Fellows
- 4 Residents
- 5 Nurses
- 7 Full Time Clinical Staff
- 6 Full Time Management and Research Staff
- 20 Full Time Research Staff
- 5 Graduate & Undergraduate Student Researchers
- 2 Fabulous Nurse Practitioners
- 1 Outstanding Physician Assistant
Major tertiary comprehensive Pain Management Center

Over 10,000 patient visits (FY13 YTD)

21 Clinical Pain Faculty
Anesthesiology
Internal Medicine
Physical Medicine and Rehab
Neurology
Headache Clinic
GI Clinics
Urology Clinics
Psychiatry

Acupuncture, biofeedback, ultrasound guided diagnostic/therapeutic nerve blocks,

Guided nerve blocks, implantable devices.
Stanford Pain Division – Clinical

- Inpatient Service
  - Perioperative pain
  - Acute pain consults
  - Cancer pain
  - Stanford Comprehensive Interdisciplinary Pain Program (SCIPP)

- Stanford Pain Management Center (Outpatient)

- Interventional Pain (Outpatient)
http://youtu.be/X0zqTdLH5aU
Complementary treatments for chronic pain
  Chronic pelvic pain
  Psychological management
  Complex Regional Pain Syndrome
  Effects of opiates on the human brain
  Fibromyalgia
  Real-Time fMRI Study
  Low back pain
  Post-surgical pain
Pain & Love

Viewing Pictures of a Romantic Partner Reduces Experimental Pain: Involvement of Neural Reward Systems

Jarred Younger, Arthur Aron, Sara Parke, Neil Chatterjee, Sean Mackey

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PLoS ONE:
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Abstract

The early stages of a new romantic relationship are characterized by intense feelings of euphoria, well-being, and preoccupation with the romantic partner.

Neuroimaging research has linked those feelings to activation of reward systems in the human brain. The results of those studies may be relevant to pain management in humans, as basic animal research has shown that pharmacologic activation of reward systems can substantially reduce pain.
Study

Participants were 15 right-handed students (8 women and 7 men, age range 19–21 years, M=20 years) in their first 9 months of a romantic relationship.

All participants described themselves as intensely in love, and scored a minimum sum of 90 on the 9-point scale, 15-item short form of the Passionate Love Scale.

Exposed to scalding water and showed pictures of the love interest and watched brain action fMRI.
Findings

In this study, it was demonstrated that pain relief experienced while viewing pictures of a romantic partner is associated with reward system activation.

Furthermore, it was shown that the neural processes associated with reward-induced analgesia are distinct from those associated with distraction-induced analgesia.
Resources

Self help books
Acupuncture
Hypnosis
Biofeedback
Distraction
Support groups
Websites
PAIN SUPPORT GROUPS
American Chronic Pain Association 916-632-0922
P.O. Box 850, Rocklin, CA 95677  http://www.theacpa.org/

PAIN CLASSES
• Stanford Pain Clinic 650-723-6238 (require a referral to Stanford Pain Clinic)
• Stanford Center for Integrative Medicine 650-498-5566
• For Those In Pain, Inc. 650-968-2323  http://www.forthoseinpain.org

PAIN/STRESS MANAGEMENT BOOKS
• The Chronic Pain Solution – by Dillard
• Feeling Good – by David Burns
• Managing Pain Before it Manages You – by Caudill
• Take Charge of Your Chronic Pain – by Peter Abaci
• Full Catastrophe Living – by Jon Kabat-Zinn

Low-Cost Acupuncture
http://www.uewm.edu/
For People in Pain & Providers that care for them

- Arthritis Foundation
- American Cancer Society
- American Chronic Pain Association
- American Council for Headache Education
- American Society of Addiction Medicine
- Cancer Care
- The National Hospice and Palliative Care Organization
- The Mayday Pain Project
- The Vulvar Pain Foundation
- National Fibromyalgia & Chronic Pain Association
- National Headache Foundation
- The TMJ Association

Information from the National Institutes of Health

- National Institute on Neurological Disorders and Stroke
- National Institute of Dental and Craniofacial Research (NIDCR)
- National Institute of Arthritis and Musculoskeletal and Skin Diseases
- National Cancer Institute (NCI)
- National Center for Complementary and Alternative Medicine (NCCAM)
Pharmaceuticals
$4 Generic Medication Program
Walmart's complete medication list: http://i.walmartimages.com/i/if/hmp/fusion/customer_list.pdf

Target's competing, very similar program: http://www.target.com/pharmacy/generics-alphabetical

Patient financial assistance programs
http://www.pfizerhelpfulanswers.com/pages/Find/FindAll.aspx
https://www.celebrex.com/offers.aspx
http://coverageforall.org/pdf/FHCERxAssistanceProgramsGuide.pdf
https://www.rxhope.com/PAP/info/PAPList.aspx?drugid=4314&fieldType=drugid
http://www.patientassistance.com/profile/endopharmaceuticalsinc-135/
Jane 55 year old female, who had undergone knee replacement surgery 6 months ago. Prior to her surgery she had suffered with OA knee pain for 5+ years, taking a combination of NSAIDs and Vicodin on a daily basis.

Her pain continues to be rated a 6 on a scale of 0 -10. Despite heavy medication, she was unable to be fully bear weight on her knee and required a cane. Because of this Chronic Pain, she also become tolerant to these medications, so when they were reduced, the pain came back even stronger.

**CC:** knee swelling, pain to the anterior and medial aspect of the knee with localized sensory deficits. Depression. Constipation. Poor sleep.

**Current medications:**
1) Oxycodone 30 mg qid
2) Ibuprofen 800 mg tid
3) Trazodone 50-100 mg qhs

**Social History:** Widowed. No children. Disability.
Chronic Pain Case-Studies:

What other information would you like regarding her history?

Would you consider this chronic pain or acute post-operative pain? Why?

How would you change her medications?

Are there any interventions that would be appropriate?
Chronic Pain Case-Studies:

How would you apply an interdisciplinary approach to her pain management?

What complementary therapies would be appropriate to recommend?

What would you want to consider when recommending complementary therapies?
Selected Case-Studies: Respiratory depression/delirium: Co-use of opioids & benzodiazepines

Objectives

1. Describe patient and medication risk factors for opioid-induced respiratory depression.
2. Plan a management strategy for avoiding respiratory depression.
3. Describe the risk of polypharmacy with multiple agents effecting the CNS.
4. Plan a management strategy for avoiding the risk of delirium in an elderly patient with polypharmacy.

A 76 y/o female with severe lumbar stenosis, moderate COPD, depression, poor sleep and HTN. Chief complaint is of low back pain. She rates the pain as 9/10, severely limiting her movement.

The pain is poorly relieved by 80 mg q12h of OxyContin and ibuprofen 600 mg q6h.
Daily medications:

OxyContin 80 mg bid
Ibuprofen 600 mg q6hrs prn
Valium 5 mg prn for muscle spasm
Seroquel 25-50 mg qhs for sleep
Lopressor HCT (metoprolol/hydrochlorothiazide) 100/25 mg qd

QUESTIONS:

1. What are the patient and drug risk factors for respiratory depression?
2. How would you modify her medications for improved pain management?
3. What are the patient and drug risk factors for delirium?
4. How would you modify her medications to reduce the risk of delirium?
5. Any other considerations?
JR is a 20 y/o active college freshman, otherwise healthy, suffered an ankle fracture while skateboarding.

ORIF of ankle fracture, POD #2.

10/10 pain. Crying.

1gm tylenol qid, morphine 10mg q3-4hr, MS 2-4mg IV q6hr prn.
**HX:** Occasional tylenol or ibuprofen OTC for various aches and pains. NKDA. Denies ETOH, tobacco, illicit drugs.

**SH:** College Freshman, lives in fraternity, plays soccer. Has a girlfriend, good student. Parents divorced, good relationships with family.

**Pre-op Labs:**
CBC = nl
CMP = nl
LFT’s = nl
urine tox screen = pos opiates & THC.
Substance use history

- * Fraternity brother once shared his vicodin when JR took a bad hit during a soccer game.

- * JR liked the way that the vicodin made him feel and started using on the weekends with his friends.

- * Admits to smoking marijuana after Friday night games.

- * Continues to deny ETOH, or tobacco use.
Revised History:

- 18 y/o male POD #2 ORIF ankle fracture, who is opiate tolerant and history poly substance use.

- Continues to be 10/10 pain: 1gm tylenol qid, morphine 10mg po q3-4hr, MS 2-4mg IV q6hr prn.

- How would you change JR’s medications?
Manage his acute pain

- Continue tylenol 1gm qid, avoid NSAIDS.
  - nl LFT’s, reduce amount of needs opiate. NSAIDS interfere w/ bone healing, Celebrex may be ok.

- MSContin 15mg bid, morphine 10mg q2-3hrs prn, consider starting MS PCA @ 2-4mg q10 minutes.
  - Opiate tolerant. Hx polysubstance use and has been using po & IV opiates over the past 24hr w/o adequate pain control or sedation. PCA will allow you to calculate how much opiate he truly needs in a 24hr period.

- Next morning you calculate: used 90mg oral morphine and 30mg IV MS.
  - MS IV to po 1:3. Calculate total of 180mg MS q24hr (90+90). ½ total 24hr dosing in “long-acting opiate” & ½ in “immediate release”: 45mg MSContin bid & 10-20mg MSIR q3-4hrs prn.
  - Alt – 45mg MSContin tid & 10mg q3-4hr prn.
Alternative: Use of regional anesthesia

Placement of Popliteal Nerve Catheter

**Popliteal Block: Distribution of Anesthesia**

- Lateral Sural Cutaneous
- Saphenous
- Superficial Peroneal
- Sural
- Deep Peroneal

**ON-Q Pump**

- Clip to Patient
- ON-Q Pump
- Dressing
- Wound Site
- Flow Restrictor
- Catheter
JR is doing well on MSContin 45mg tid, PCA is stopped, using occasional IV MS 2-4mg for incident pain with dressing changes.

The Orthopeadic Team wants to d/c JR tomorrow morning and is asking if he could come and see you in clinic.
6 months later, JR is completing his first year of college and has decided to study chemistry/pharmacy.

Don’t think it’s end of his experience with orthopedic surgery!!
Selected Case-Studies: Differentiating pain from addiction

Objectives:

1. Examine personal attitudes towards drug addiction and pain management.

2. Define tolerance, physical and psychological dependence (addiction).


A 25 y/o man has been hospitalized for 2 weeks with newly diagnosed lymphoma. He is being treated with combination chemotherapy.

Ten days after the start of chemotherapy he develops severe pain on swallowing--upper GI endoscopy reveals herpes simplex esophagitis. He is unable to eat solid foods due to the pain although he can swallow some liquids.

The pain is described as "really bad" and is not relieved by acetaminophen with codeine elixir ordered q4h prn.
The patient repeatedly asks for something for pain prior to the 4 hour dosing interval and is often seen moaning. The physician is concerned about using an opioid of greater potency or administering opioids more frequently because the patient admitted to a history of poly-drug abuse, although none in the last two years. The nurses are angry at the patient because of the repeated requests for medication and have written in the chart that the patient is drug seeking, possibly an addict.

You are asked to see the patient as a "pain consultant". After your assessment you recommend a change to MSIR Elixir 15 mg q3-4 around-the-clock. The resident calls you after reading your consult note and says: "I appreciate your consult but I really think this patient is drug seeking and I don't feel comfortable with your recommendations—let me think it over, I was thinking of asking a psychiatrist to see him to help with addiction management."

The next day you check the chart and find that your suggestion has not been taken but the acetaminophen with codeine was discontinued in place of oxycodone/acetaminophen elixir q4 prn (equivalent to one Percocet Q4).

Over the next several days the patient is still complaining of pain with no new analgesic orders.
QUESTIONS:

1. Put yourself in the position of the resident physician or staff nurse—what are their major concerns about providing stronger analgesics to this patient?

2. Is this patient a drug addict? Why or why not?

3. As the pain consultant what would you do to educate your colleagues about this patient?

4. Non-opioid or other options available?
Selected Case-Studies: Weaning a non-compliant patient off of opioids

Objectives:
1) Explain how you protect yourself against being accused of patient abandonment when stopping opioid therapy.
2) Describe the risk to you if you continue to prescribe opioids to a non-compliant patient.
3) Plan a safe opioid weaning schedule to reduce the risk of harm to the patient.

Mr. Smith is a 35 year old male who has been using Vicodin ES 7.5/325mg for the past 2-3 years after suffering a job related injury. He is employed as a patrol officer.

Over the past 6 months the patient has become non-compliant with your previously established opioid contract (failed to present a current urine toxicology screen, has called in on two occasions for early prescription refills, has missed is monthly clinic follow ups on at least two occasions, and has been found on recent CURES report to have obtained an opioid prescription for a medical provider not associated with you clinic).
You ask Mr. Smith to come in for a clinic visit to discuss the issues surrounding non-compliance, and the decision is made to wean the patient off of his COT.

Questions:

1) How you protect yourself against being accused of patient abandonment when stopping opioid therapy.

2) Describe the risk to you if you continue to prescribe opioids to a non-compliant patient.

3) Plan a safe opioid weaning schedule to reduce the risk of harm to the patient.
Questions?