Integrated Pain Management

Michael Jaffe, D.O.
Physical Medicine & Rehabilitation
Pain Management

Definition of Pain

"Pain is an unpleasant sensory and emotional experience associated with actual or potential tissue damage, or described in terms of such damage".

International Association for the Study of Pain
Approximately one-third of American’s suffer from chronic pain
Pain is subjective
Chronic Pain

Pain that extends beyond the expected period of healing.

Types of Pain:
- Visceral
- Somatic
- Neuropathic
- Psychogenic

Other Definitions

**Allodynia** - Pain due to stimulus which does not normally cause pain

**Hyperalgesia** - An increased response to a stimulus which is normally painful.

**Hyperesthesia** - Increased sensitivity to stimulation.

**Hyperpathia** - A painful syndrome characterized by an abnormal painful reaction to a stimulus.

**Dysesthesia** - An unpleasant sensation, whether spontaneous or evoked

**Causalgia** - A syndrome of sustained burning pain, allodynia, and hyperpathia after a traumatic nerve injury.
1) C-fibers enter the Dorsal Horn of the spinal cord and form synaptic contacts with two discrete populations of "second order" spinal afferents.

- **Nociceptive specific neurons (NS)** which function in the spinal cord to localize pain
- **Wide dynamic range (WDR)** neurons evoke sensations of itch, pressure, parasthesias.

2) The C-fibers release glutamate, which bind two types of post-synaptic receptors

- AMPA for a fast excitatory response.
- NMDA that heighten the response of second order neurons to subsequent stimulation (hyperpathia)

3) The C-fibers also release substance-P that binds to neurokinin-1 (NK-1). Persistent activation of NK-1 remodels the synaptic organization of the dorsal horn.

4) C-fibers can retrogradely release substance-P and calcitonin to the tissues they innervate. These potent vasodilators release inflammatory substances from the vasculature.

**Chronic Pain Syndrome**

Changes in C-fiber sensitivity can produce autonomous, independent C-fiber firing patterns that can amplify the signal of pain.

2) A branch of the STT projects to the raphe nuclei and loci ceruleus. These nuclei respond by altering the synthesis of serotonin and norepinephrine which mediate mood, emotion, and cognition.

3) STT can also amplify opiate, serotonergic and noradrenergic pain modulation via "descending pathways" in the spinal cord.

**Chronic Pain Syndrome**

1) The majority of the NS and WDR second order neurons that receive C-fiber input cross-over and ascend the spinothalamic tracts (STT).
Hypersensitvity in Chronic Pain


Main Outcome Measures: Pressure-pain thresholds (PPTs) were measured at the middle deltoid of the affected/dominant arm and the middle deltoid and tibialis anterior of the unaffected/nondominant side (secondary hyperalgesia) in SIS and healthy controls, respectively. N=62

Conclusion
This study provides further evidence that subjects with chronic shoulder pain due to SIS have lower pain thresholds than do control subjects in both local areas and distal areas from their affected arm. This suggests that subjects with SIS may be experiencing central hypersensitivity.

Size of the Problem

* Millions of Americans suffer from chronic pain
* Kaiser Utilization of resources
  4 X more outpatient visits / inpatient admissions
  3.5 X pharmacy costs
  3 X more ER visits
*If you add in Addiction to opiates- 8x higher utilization health care costs.

Kaiser Southern California Chronic opiate use: 3 or more opiate prescriptions in the last 6 months – over 12,000 members.
Risk Factors for developing Chronic Pain - Dysfunctional D’s

* Deficits of coping skills – catastrophisers
* Distress: anxiety, anger, resentment, and alienation
* Disturbed sleep
* Disability
* Deconditioning
* Depression
* Derivative- secondary gain
* –Late... Overweight... prone to Over-rate.

Risk Factors for developing Chronic Pain

* Will This Patient Develop Persistent Low Back Pain
JAMA, April 2010 - Met analysis of 20 studies with 10,842 patients
with less than 8 weeks LBP who went on to develop chronic low
back pain for > 1 year.
* -Maladaptive coping behaviors (fear avoidance beliefs)
* -Nonorganic clinical signs (Waddell signs)
* -High levels of baseline functional impairment
* -Psychiatric comorbidities
* -Low general health status
* -Widespread pain or somatization (highest)
Neuroimaging in Chronic Pain Patients

* 148 VA subjects without baseline LBP
* Baseline & 3-year MRIs
* 3-year incidence of pain 67%
* Protrusions, nerve root contact, central stenosis not statistically significant for developing LBP
* Disc extrusions most clinically important new imaging finding.
* Diagnosis of depression was strongest predictor of developing LBP (> than any imaging finding)

Jarvik, JJ Spine 2005

Chronic Pain Definitions

The Level 1 Patient
Stable, Functional, Stable Pain Medication use.
Example- our osteoarthritis patients

Chronic Pain Cohort measurement: 5.1% adult Kaiser members (DM-7.7% Depression- 6.5%, CAD 3.2%
4X more utilization outpatient visits, Pharmacy 3.5 X higher, In-patient 3.7 X higher, ER visits 2.7 X higher

*The Permanente Journal- Summer 2005
Chronic Pain Definitions

The Level 2 Patient
* Instability, Decreased Function, Breakthrough use of Pain Medications.
* May Need next Step in Clinical & Medication Management
* Example: Fibromyalgia and chronic daily Low Back Pain patients.

The Level 3 Patient
Physical & Psychological Dysfunction
Opiate Medication Dependent, Opiate Addiction, and Overuse
Example: Failed Back Surgery Syndrome

Goal of IPM to prevent Level 2 Chronic Pain Patients from becoming level 3 patients
Plan for Treating Chronic Pain:

* Comprehensive initial evaluation
* History & Physical Examination

Plan for Treating Chronic Pain:

* Establish a Diagnosis
  * Xrays, MRIs, Labs
  * Psychological evaluation
  * Diagnostic interventions / electrodiagnostics (EMG / NCS)
  * Specialty department referrals
* Be frank with your patient’s Diagnosis & Treatment plan.
* Explain Chronic Pain is a chronic medical condition.
Plan for Treating Chronic Pain:
1. Exercise is key
   Physical Therapy vs Physical Training
   -Give a Exercise Prescription

Functional Restorative Exercise

* FRE programs focus on generalized conditioning with a focus on conditioning of the body’s musculoskeletal and cardiovascular system.
* FRE educates chronic pain patients that physical movement is an essential part of the body’s own healing mechanisms both physical and mental.
* In FREs patients are taught **not to fear movement** and to help patients develop home based exercise programs that become habitual and sustained.
* The benefits of a true FRE program is to motivate patients to take responsibility for their own chronic pain through being active and developing a sense of feeling productive in their self-care.
Plan for Treating Chronic Pain:

1) Stress reduction / “Take control”
   Self-Management strategies
2) Treat Depression- In one study treatment of depression resulted in a 30% reduction in pain scores*

* Kroenke, JAMA 2009

Health Mind Healthy Body Stress Management classes.
One class per week for 9 weeks.
Zion & Positive Choice (Clairemont)
Alternating OTM & North County
Times 12:00pm-2:00pm & 5:30pm-7:30pm
Health Education self referral 619-641-4194

Plan for Treating Chronic Pain:

1. Sleep disorder correction
   Trazodone 25mg – 50 mg
   Zanaflex 2mg – 4 mg
   Flexeril 10 mg
   Nortriptyline 10 mg – 50 mg
   Ambien 5 mg*- 10 mg
   Klonopin 0.5 – 1 mg

   Sleep Evaluation – Neurology department
   Sleep Clinic Referral on Tapestry
Step Plan for Treating Chronic Pain:

1. Therapeutic Interventions

   Trigger point injections, joint injections, Epidural injections, Botox, Nerve blocks, Platelet Rich Plasma, Surgery etc.
   * Try not to have patients become reliant on any clinician to make them feel better. – set boundaries.

Interventional Anesthesia Department

**Goals of Interventional Anesthesiology Pain (IAP) Department**

* 1) Provide Interventional Services for Pain Management
   * Epidural Steroids injections
   * Facet/Median Branch blocks
   * Radio Frequency Ablations
   * Diagnostic blocks

* 2) Provide Interventional Consultative Services, e.g. cancer pain, Complex Regional Pain Syndrome, kyphoplasty, spinal cord stimulators, and Intrathecal pumps etc.
Integrated Pain Management Cognitive Behavior Program

* Appropriate patients participate in a 6 week twice a week (12 sessions) group where evidence-based pain management techniques are introduced. (Cognitive behavior Therapy & Rehabilitation- CBTR Program) Topics of the group include activity pacing, cognitive – behavioral techniques, sleep hygiene, relaxation/breathing exercises, mindfulness, posture, ergonomics, body-mechanics, flare-up management.

* Currently CPP-CBTR is scheduling and average of 25 patients per CBTR class

* There are 3 classes starting each month.

* Garfield / San Marcos/ Bostonia

CBTR Graduates 2012
N=122

<table>
<thead>
<tr>
<th>Cohort</th>
<th>Cohen’s d</th>
<th>Cohen’s d</th>
<th>Cohen’s d</th>
</tr>
</thead>
<tbody>
<tr>
<td>BDQ Pre</td>
<td>1.06</td>
<td>1.07</td>
<td>1.41</td>
</tr>
<tr>
<td>BDQ Post</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BDQ Change</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Cohens’s d: Small = .2, Medium = .5, Large = .8
Integrated Pain Management
Acupuncture referrals

Acupuncture referrals maybe sent by ANY Kaiser physician as long as the acupuncture is part of an integrated pain management treatment plan. Acupuncture at Kaiser is not considered first line or a sole treatment modality.

• Patients need to know may take up to 7-10 days before contacted by ASH
• Maintenance acupuncture treatment not indicated
• 4-5 visit trial period
• 20 visit guideline
• Pregnancy OK in 2nd-3rd trimester

*The Initial Acupuncture referral must be generated by a Specialty Medical Services such as; Physical Medicine, Neurology, OB/GYN, etc.
*Renewal acupuncture referrals may be placed by Primary Care Physicians

Medication management for Chronic Pain

* Tylenol – 3000 mg per day
* NSAID – GI bleeds and Renal insufficiency
* Muscle Relaxants (Flexeril, Robaxin, Zanaflex, Baclofen
* Co-analgesics
  * Seizure Rx; Neurontin, Lyrica, Topamax,
  * Antidepressants; Nortriptlyine, Effexor, Cymbalta
* Opiates
* Schedule 3
  Hydrocodone / Ultram /Codeine /Suboxone (buprenorphine)
* Schedule 2
  * Morphine / Oxycodone/ Dilaudid/ Methadone/ Fentanyl
Opioids in Chronic Noncancer Pain

Prescription Painkiller Overdoses: A U.S. Epidemic

From 1999 to 2010, the number of U.S. drug poisoning deaths involving any opioid analgesics (e.g., oxycodone, methadone, or hydrocodone) more than quadrupled.

More than 12 million people reported using prescription painkillers nonmedically in 2010, - using them without a prescription.

- People who obtain multiple controlled substance prescriptions from multiple providers— a practice known as “doctor shopping.”
- People who take high daily dosages of prescription painkillers and those who misuse multiple abuse-prone prescription drugs.
- Low-income people and those living in rural areas.
- People on Medicaid are prescribed painkillers at twice the rate of non-Medicaid patients and are at six times the risk of prescription painkillers overdose.
- Those with a history of substance abuse.
**Opioids for Chronic Pain**

* Long term opioid therapy for chronic noncancer pain is associated with research gaps on their utility, multiple side effects, drug abuse, aberrant drug-related behaviors, addiction and death.

* **Benefits** – Improved function, Quality of life, and chronic disease status

  * In general opioid therapy results in only a 30% reduction in pain scores Grady, Arch. Intern. Med. 2011

* **Risks** – Gonadal suppression, bone density loss, reduced function, respiratory depression, opioid induced pain, Addiction, Abuse, and Diversion.

  * Drug abuse in 18%-41% of patients receiving opioids for chronic pain Martell et al. Ann Internal Med. 2007

**Opioids in Chronic Pain**

* Opioid Information Sheet
  * .opioidinformation

* Controlled Substance Treatment Agreement
  * .opioidtreat

* Opioid Treatment Plan Agreement
  * Insert Smart Text
  * Pain opioid Treatment Plan

* Schedule Regular appointments
Target Population

<table>
<thead>
<tr>
<th>Groups</th>
<th>Category</th>
<th>Patient Attributes</th>
<th>Assessment</th>
<th>Urine Drug Screen</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low Intensity Monitoring</td>
<td>Low Abuse Risk</td>
<td>Taking less than 20 mg MED/day (morphine equivalent dose) Compliant with Rx No abuse history</td>
<td>Once per year in person</td>
<td>Maybe once per year</td>
</tr>
<tr>
<td>Moderate Intensity Monitoring</td>
<td>Medium Abuse Risk</td>
<td>Taking between 20mg-120mg MED/day History of alcohol/drug abuse History of mental health issues</td>
<td>Once per year in person</td>
<td>Once per year</td>
</tr>
<tr>
<td>High Intensity Monitoring</td>
<td>High Abuse Risk</td>
<td>Taking more than 120mg MED per day or Methadone Current alcohol/drug abuse 25 years old and under Repeated problems with refills</td>
<td>Twice per year in person</td>
<td>Twice per year</td>
</tr>
</tbody>
</table>

Opioid Addiction

* Red Flags for Addiction or Substance Abuse
* Multiple dose escalations /noncompliance
* Multiple episodes prescription loss
* Repeatedly seeking prescriptions from other clinicians without informing prescriber
* Stealing or barrowing drugs
POWER OF THE PEN

* UDS – Urine Drug Screen
  * Drugs of Abuse -80100A
  * Prescription Opioids – 80100zzz

* CURES – Reports
  Controlled Substance Utilization Review and Evaluation System (CURES)
  http://oag.ca.gov/cures-pdmp

Who is Integrated Pain Management?

* Physical Medicine & Rehabilitation
* Pain Management
  * Cognitive Behavioral Program
  * Pain Management Physicians (consultation)
  * Functional Restorative Program
* Psychiatry
* Interventional Anesthesiology Pain
* Future -Addiction Medicine
* Migraine CBT program
Physicians may refer to Integrated Pain Management via any of the three IPM departments

**Tapestry Referral Process (pull downs)**
* Pain Management Referral
  * Acupuncture
  * Interventional Pain Management
  * Integrated Pain Management
  * CBTR (Cognitive Behavioral Therapy & Rehabilitation Program)
* Other (please specify)

**Physical Medicine and Interventional Anesthesia separate Tapestry referrals still available.**
How IPM Works: RN Case Managers

6 RN Case Managers
Mary Laskin RN,
Diana Donofero RN,
Deborah Cipriano RN,
Debbie Rusth RN,
Pam Brondstetter RN,
Judy Fox RN

* Triage Incoming Tapestry Referrals
* Assist with Case Management for patient's with chronic pain
* Phone contact for referring providers

Integrated Pain Management Physician Consultation

* Dr. Patrick Watson
* Dr. Annette Ambach
* Medication adjustments and recommendations
* Second opinion on medical diagnoses that cause chronic pain
* Recommendations for further medical work up need for Interventional therapy, and or referral to other specialty services (such as psychiatry)
* Help to stabilize opiate use and NOT long term opiate prescription refills.
Integrated Pain Management
Cognitive Behavior Program

- The Comprehensive Pain Program is an interdisciplinary program for patients with chronic pain (defined as pain that extends beyond the expected period of healing - 6 months).

Psychologists: Karen Chung, PhD & Gali Goldwaser, PhD
Pharmacy: Terry O'Toole, RegPh
Physical Therapy: Kara Barnett, PT

- Run CBTR Program
- Administer and track Outcome Measures for IPM
- Coordinate appropriate care and accessibility to the Psychiatry department for treatment

Goals of IPM program:
- To treat and prevent level 2 patients from progressing to level 3 pain patients.
- To educate level 3 pain patients.
- 3 locations Garfield / San Marcos / Rancho San Diego*
Interventional Anesthesiology Pain

* Physicians: Dr. Hansang Noh PIC, Dr. Michael McBeth, Dr. Jai Sethee
  * Dr. Lisa Phillip, Dr. Nimish Dave (plan to add this physician in 2012)

**Goals of Interventional Anesthesiology Pain (IAP) Department**

* 1) Provide Interventional Services for Pain Management
* 2) Provide Interventional Consultative Services for Primary Care Physicians (PCP) and other specialty services, e.g. cancer pain, Complex Regional Pain Syndrome, kyphoplasty, and spinal cord stimulators etc.

Integrated Pain Management Pain Information Phone

* An Integrated Pain Management (IPM) Information Phone line is being set up to help guide physicians through the **IPM referral process**.

* Phone Tree Number # **(619) 528-PAIN** (7246)
  * Tie Line (8) 28o-PAIN

* Business Hours M-F 8:00 AM – 5:00 PM
* RN Case Manager to staff phone line
* Pain Management Physician OD Call to VM than OD returns call
Working with Patients Who Have Chronic Pain

* Be Frank with your patient’s Diagnosis & Treatment
* Chronic Pain is a chronic medical condition
* Give Exercise prescription
* Instruct patients to Pace themselves
* Clarify Pain Medication use
* Self-Management strategies
* Do not treat Chronic Pain as a medical emergency
  * calm / supportive
  * Schedule Regular appointments

Thank You