OPIOIDS AND CHRONIC PAIN
RESCUING YOUR PATIENTS FROM PILL ISLAND

Bennet Davis, M.D.
A patient-centered approach to tapering opioids

Simply treating opioid addiction isn’t enough. Instead, reposition your patient’s singular circumstances and needs at the center of efforts to end use of these agents.

Many American who are treated with prescription opioid analgesics would be better off with less opioid or none at all. To that end, published opioid prescrib-
FDA identifies harm reported from sudden discontinuation of opioid pain medicines and requires label changes to guide prescribers on gradual, individualized tapering

*FDA Drug Safety Communication*

[4-9-2019] The U.S. Food and Drug Administration (FDA) has received reports of serious harm in patients who are physically dependent on opioid pain medicines suddenly having these medicines discontinued or the dose rapidly decreased. These include serious withdrawal symptoms, uncontrolled pain, psychological distress, and suicide.

Rapid discontinuation can result in uncontrolled pain or withdrawal symptoms. In turn, these symptoms can lead patients to seek other sources of opioid pain medicines, which may be confused with drug-seeking for abuse. Patients may attempt to treat their pain or withdrawal symptoms with illicit opioids, such as heroin, and other substances.

René Descartes conceived the pain sensing nervous system this way in the 17th Century
Nociceptive Pain

C & Aδ Fibers

Somatosensory Cortex

Thalamus

From Brain

To Brain

Spinal Cord
Nociceptive Pain

- **Transduction** (Nociceptors)
- **Transmission** (Peripheral nerve)
- **Modulation** (Spinal cord & Thalamus)
- **Perception** (Somatosensory cortex)
Nociceptive Pain

Pain Stimulus
(trauma, inflammation, heat, etc.)

Sensory processing of pain stimulus

Emotional processing of pain stimulus

Emotional Distress and Unpleasantness

PAIN AND DISABILITY
Examples

- Arthritis (degenerative or inflammatory)
- Radiation fibrosis from cancer
- Burns
- Back pain
- Fractures

Described as: “sharp, dull, aching”
Neuropathic Pain

Transduction (Nociceptors)

Transmission (Peripheral nerve)

Modulation (Spinal cord & Thalamus)

Perception (Somatosensory cortex)
Neuropathic pain from nerve injury

Physical injury to the nervous system, or modification of the nervous system by chemicals, inflammation...

Altered Sensory processing
Neuropathic pain from nerve injury

PAIN AND DISABILITY

Non-painful stimuli

Altered Sensory processing

Emotional processing of pain stimulus

Emotional Distress and Unpleasantness
Neuropathic pain from nerve injury

Altered Sensory processing

Emotional processing of pain stimulus

Emotional Distress and Unpleasantness

PAIN AND DISABILITY
Neuropathic pain From Nerve Injury

Examples

- Diabetic and other neuropathies
- Post herpetic neuralgia
- CRPS
- Phantom limb pain
- Spinal cord injury and post stroke pain
- Brachial plexus injury
- Opioid induced hyperalgesia

Described as:
“burning, shooting, electrical” with heightened sensitivity to stimuli
9 years ago:

International Association for the Study of Pain (IASP) updates their definition of pain

Many people report pain in the absence of tissue damage or any likely pathophysiological cause; usually this happens for psychological reasons.
Neuropathic Pain From Experiences That Re-organize the Nervous System

No physical nerve injury

TRAUMATIC EXPERIENCE /TOXIC STRESS
(War, abuse, assault, neglect, environment)

Altered Sensory processing of pain stimulus
Neuropathic Pain From Experiences That Re-organize the Nervous System

Non-painful stimuli

"TRAUMA INDUCED HYPERALGESIA" (TIH)

Altered Sensory processing

Emotional processing of pain stimulus

Emotional Distress and Unpleasantness

PAIN AND DISABILITY
Neuropathic Pain From Experiences That Re-organize the Nervous System

TRAUMA INDUCED SPONTANEOUS PAIN

Altered Sensory processing ➔ Emotional processing of pain stimulus ➔ Emotional Distress and Unpleasantness

PAIN and DISABILITY
Neuropathic Pain From Experiences That Re-organize the Nervous System

Pain described as:
“cruel, punishing, fearful, horrible”
Why do emotional responses/behaviors predominate in NPP resulting from experience?
Healthy Nervous System

Biological Changes in the “Stress/Threat Adapted Nervous System”:

- Altered neurohumoral system
- Inflammation
- Altered immune system
- Altered endocrine system: increased stress hormone levels
- Changes in the way DNA is read

Symptoms

- Fatigue
- Addiction
- Depression
- Anxiety
- Insomnia
- Chemical coping

TRAUMA/TOXIC STRESS

Obesity
Short lifespan
Chronic pain
Clinical Clues:

- “Nothing works for my pain” besides medications with psychotropic action (includes opioids, benzodiazepines, etc.)
- Diffuse pain with no clinical cause evident
- Multiple somatic complaints
- Disability is out of proportion to objective clinical pathology
- Pain behaviors seem out of proportion to the severity of the painful stimuli
- Emotionally charged behaviors in the office – crying, etc
- Patient describes pain using emotionally charged words: “I cry in pain”
"I get so irritated with people who don't believe fibromyalgia is real. For me, and I think for many others, it's really a cyclone of anxiety, depression, PTSD, trauma, and panic disorder, all of which sends the nervous system into overdrive, and then you have nerve pain as a result,"
Experimental evidence: psychological trauma leads to altered sensory processing

• Deep pain (pressure) thresholds were found to be lower in the back AND the hand in subjects with LBP who had a history of psychological trauma; lower only in the back in subjects w/o psychological trauma, “...suggests trauma induced abnormalities in central pain processing...” ¹

¹ Tesarz J. Distinct quantitative sensory testing profiles in nonspecific chronic low back pain subjects with and without psychological trauma. Pain 2015; 156: 577-86
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- Higher pain ratings to hand immersion in cold water in psychological trauma exposed women compared to non-trauma exposed controls. ²

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- Higher pain ratings to hand immersion in cold water in psychological trauma exposed women compared to non-trauma exposed controls. ²

- Lower ischemic pain threshold in women with psychological trauma history compared to women without trauma history. ³

Experimental evidence: psychological trauma, and not anxiety, leads to altered sensory processing

Study comparing veterans with anxiety to those with PTSD

Experimental evidence: psychological trauma causes chronic pain

*Temporality and Association*

**Adult trauma**: Prevalence of Psychological Abuse in a Chronic Pain Treatment Sample (Lake)

- 50% reported at least one type of abuse experience (i.e., physical, emotional, or sexual) in the past 12 months
Experimental evidence: psychological trauma causes chronic pain

Temporality and Association

Developmental trauma and pain: A 2005 Systematic review of the literature

• Adults who reported being abused or neglected in childhood reported more pain symptoms and related conditions than those not abused or neglected in childhood

• Adults patients with chronic pain were more likely to report having been abused or neglected in childhood than controls chronically ill patients with no chronic pain

• Adult patients with chronic pain were more likely to report having been abused or neglected in childhood than nonpatients with chronic pain identified from the community

• Adult non-patients with chronic pain were more likely to report having been abused or neglected than individuals from the community not reporting pain.

Experimental evidence: psychological trauma causes chronic pain

*Dose-Response* between trauma and pain

Experimental evidence: psychological trauma causes chronic pain

Reversibility - trauma treatment decreases pain

• 2016: EMDR and reprocessing vs care as usual (PT, meds) for chronic back pain in 40 people with a history of psychological trauma:
  • No improvement in the care as usual group
  • 50% of the treatment group reported clinically significant pain decrease that sustained at 6 month follow up.

• 2019: There are now also six randomized controlled clinical trials available that demonstrate the efficacy of EMDR in the treatment of different pain conditions.

What the patients describe

- Chronic abdominal pain
- Headache
- Chronic back pain
- Multiple joint pain
- Hurt all over
- Fatigue
- Neurological abnormalities

Medical diagnoses under which these patient may be "misfiled"

- Chronic back pain
- Headaches
- Chronic abdominal pain
- Fibromyalgia
- Dysautonomia
- Joint hypermobility syndrome
- Chronic Lyme Disease
- Functional movement disorders
- Dystonia
- Small Fiber Neuropathy
- Multiple sclerosis
- Lupus
- Rheumatoid arthritis
- Mold exposure
- Toxic exposure (metals pesticides)
Nociplastic Pain: “Pain that arises from altered nociception despite no clear evidence of actual or threatened tissue damage causing the activation of peripheral nociceptors or evidence for disease or lesion of the somatosensory system causing the pain.”

International Association for the Study of Pain. 2017
A typical primary care ‘Chronic Pain Patient”

1:

Please respond to each item by marking one box per row.

<table>
<thead>
<tr>
<th>Item</th>
<th>Question</th>
<th>Scale</th>
</tr>
</thead>
<tbody>
<tr>
<td>PAINQU6</td>
<td>How intense was your pain at its worst?</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>PAINQU8</td>
<td>How intense was your average pain?</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>PAINQU21</td>
<td>What is your level of pain right now?</td>
<td>1 2 3 4 5</td>
</tr>
</tbody>
</table>
A typical primary care ‘Chronic Pain Patient’

2:

GAD-7 Screening Questions

During the last 2 weeks, how often have you been bothered by the following problems?

<table>
<thead>
<tr>
<th>Question</th>
<th>not at all</th>
<th>several days</th>
<th>more than half the days</th>
<th>nearly every day</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Feeling nervous, anxious, or on edge</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>2 Not being able to stop or control worrying</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>3 Worrying too much about different things</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>4 Trouble relaxing</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>5 Being so restless that it is hard to sit still</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>6 Becoming easily annoyed or irritable</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>7 Feeling afraid as if something awful might happen</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Score: 21

If you checked off any problems, how difficult have these problems made it for you to do your work, take care of things at home, or get along with other people?

Not difficult at all Somewhat difficult Very difficult Extremely difficult

[ ] [ ] [ ] [ ]
A typical primary care ‘Chronic Pain Patient”

3:

Adverse Childhood Experience (ACE) Questionnaire
Finding your ACE Score on 10/24/04

While you were growing up, during your first 18 years of life:

1. Did a parent or other adult in the household often ...
   Swear at you, insult you, put you down, or humiliate you?
   Yes No
   Act in a way that made you afraid that you might be physically hurt?
   If yes enter 1

2. Did a parent or other adult in the household often ...
   Push, grab, slap, or throw something at you?
   Yes No
   Ever hit you so hard that you had marks or were injured?
   If yes enter 1

3. Did an adult or person at least 5 years older than you ever...
   Touch or fondle you or have you touch their body in a sexual way?
   Yes No
   Try to or actually have oral, anal, or vaginal sex with you?
   If yes enter 1

4. Did you often feel that…
   No one in your family loved you or thought you were important or special?
   Your family didn’t look out for each other, feel close to each other, or support each other?
   Yes No
   If yes enter 1

5. Did you often feel that…
   You didn’t have enough to eat, had to wear dirty clothes, and had no one to protect you?
   Your parents were too drunk or high to take care of you or take you to the doctor if you needed it?
   Yes No
   If yes enter 1

6. Were your parents ever separated or divorced?
   Yes No
   If yes enter 1

7. Was your mother or stepmother:
   Often pushed, grabbed, slapped, or had something thrown at her?
   Sometimes or often kicked, bitten, hit with a fist, or hit with something hard?
   Ever repeatedly hit over at least a few minutes or threatened with a gun or knife?
   Yes No
   If yes enter 1

8. Did you live with anyone who was a problem drinker or alcoholic or who used street drugs?
   Yes No
   If yes enter 1

9. Was a household member depressed or mentally ill or did a household member attempt suicide?
   Yes No
   If yes enter 1

10. Did a household member go to prison?
    Yes No
    If yes enter 1

Now add up your “Yes” answers:

This is your ACE Score

2-21-11

9
Emotional Pain

- Social rejection
- Grief
- Isolation
Social interactions mediate pain perception

• Socially isolated people have a lower pain threshold

• Degree of social support at diagnosis of RA predicts pain intensity at 3 year follow up

• Pain scores correlate positively with perceived social support in people with chronic musculoskeletal pain

Eisenberg N. Pain 2006;126:132-8
Evers A. Beh Res Ther. 2003;41:1295-1310
Emotional Pain

- How about Anxiety and Depression??
<table>
<thead>
<tr>
<th>Emotional Pain</th>
<th>Depression</th>
</tr>
</thead>
<tbody>
<tr>
<td>Meta-analysis compared pain perception of depressed and control participants.</td>
<td></td>
</tr>
<tr>
<td>32 experimental pain studies examined.</td>
<td></td>
</tr>
<tr>
<td>Overall pain threshold was higher in depression but strong heterogeneity was evident.</td>
<td></td>
</tr>
<tr>
<td>No differences in pain tolerance were found.</td>
<td></td>
</tr>
</tbody>
</table>

What is Pain 2019?

An experience produced by any combination of:

• Nociception

• Neuropathic from physical nerve damage or disease

• Neuropathic from a Threat Adapted Nervous System: Nociplastic pain

• Grief, Rejection, Isolation
What is Pain 2019?

An experience produced by any combination of the 4 processes, interpreted through the lens of the individual’s life experience and emotional state:

- **Culture, Beliefs, Values, Assumptions**
- **Anxiety, depression**
What is Pain 2019?

An experience produced by any combination of the 4 processes, felt and interpreted through the lens of the individual’s life experience and emotional state, and modified by the important relationships in the individual’s life.

- Family
- Work
Why do we taper opioid?

- Patient has OUD – consider MAT
- Patient is diverting opioid – public health mandate
- Patient is not benefitting
- Patient has intolerable side effects
- Patient will not engage in self care
- Patient is high risk for overdose due to mental health condition(s)
- Patient is using opioid as a psychotropic
“Addiction occurs in only a small percentage of people who are exposed to prescription opioids, even among those with preexisting vulnerabilities.”

Nora Volkow, Director of the National Institute on Drug Abuse
Evidence that opioid is used as a psychotropic for many of our people on chronic opioid therapy

51% of the opioid pain killer prescriptions written in the United States go to the 16% of the American population with mental health diagnoses of Anxiety or Depression.

An American with Depression or Anxiety is 4 x more likely to be prescribed an opioid pain killer than an American without these diagnoses.

Who are these people on pill island?

- People prescribed opioid, suffering a chronic painful physical illness who want to stop
  - Not enough benefit
  - Side effects
  - Other reasons

- People using opioid as a psychotropic, often with trauma induced hyperalgesia using opioids to treat anxiety, depression, and trauma related neuropathic pain
  - Taper opioid only if the root issue is addressed
  - May not want to change treatment plan, but they will deteriorate with time of they do not
THANK YOU!

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