Chronic Pain Management

Janell Simpkins MD, FACP
Avera eCARE Specialty Clinic Medical Director

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Burden of Pain

- 100 million Americans report ongoing pain
- 25 million with daily pain
- Pain impacts health status, quality of life, use of health care services and disability
- Pain is reported at higher rates in military service veterans, women, elderly and racial and ethnic minorities
- Chronic pain is the most common reason to seek medical care, comprising 20-50% of all primary care visits

Pain

- **Pain** is a unpleasant sensory and emotional experience associated with actual or potential tissue damage
- **Acute pain** is sudden and short lived
- **Chronic pain** is pain lasting longer than normal healing and persists longer than 3-6 months
- Pain can be nociceptive, visceral, somatic, neuropathic, referred pain

Chronic Pain

- Pain lasting longer than 3-6 months
- Affects relationships, work, sleep, function, overall health and quality of life
- Non-cancer pain
- Description of pain such as location, radiation, intensity, triggers
- Associated symptoms such as muscle spasms, ROM restrictions, swelling, sensation changes
- Provider should assess activities of daily living such as performing daily functions such as bathing, dressing, driving, etc.

Why all the focus on pain?

- In 1990 Dr. Mitchell Max, the president of the American Pain Society, wrote an editorial to the Annals of Internal Medicine. He suggested that pain was invisible to doctors and that the evaluation of pain needed to be displayed like vital signs. He stated that physician should be held accountable for inadequate pain control and systems needed to be implemented to address pain

- Max stated that pain should be made visible with bedside tools initiated to guide treatment with the patients in the communication loop. Physicians would be held accountable by developing quality assurance guidelines and assessing patient satisfaction

- Max stated that therapeutic use of opiates rarely resulted in addiction which was based on one single publication with poor details (N Engl J Med 1980).

Pain Treatment Evolution

- **1992** American Pain Society released quality assurance standards for relief of acute pain and cancer pain with recommendations for the pain scale as well as charts to display pain and relief
- **1995** FDA approved sustained-release OxyContin with labeling stating "iatrogenic addiction" was "rare" with decreased abuse potential. OxyContin was aggressively marketed.
- **1997** Robert Wood Foundation funded the Joint Commission to develop pain standards including 10 point pain scale with US Veterans Health Administration calling Pain the Fifth Vital Sign
- **1999** California passed a law stating that every health facility licensed as a condition of their license would include pain as an item to be assessed at the same time as the vital signs
- **2000** the US congress passed House Resolution 3244 establishing the Decade of Pain Control and Research

Evolution of Pain Management (cont.)

- **2001** Joint Commission introduced standards for organizations to improver their care for patients with pain
- **2001** After substantial evidence of addiction and abuse of the drug OxyContin, the FDA required the manufacture to remove the previously approved labeling claiming otherwise
- **2002** AMA raised concerns that requiring all patients to be screened for pain and making pain relief a patients rights issues could lead to over-reliance on opioids
- Standards included using self-reported numeric pain scales despite no large national studies to examine whether standards improved pain control
- Institute for Safe Medication Practices linked overaggressive pain management to alarming increases in over-sedation and fatal respiratory depression

Pendulum Swing

Experts argued that focusing on pain for every encounter was inappropriate due to nature of some medical illness and also we were not assessing all symptoms

- **2009** the requirement to assess all patients for pain was removed except for patients in behavioral health care
- **2011** Joint Commission stated that both pharmacologic and non-pharmacologic strategies have a role in management of pain
- **2016** Joint Commission began a project to revise its pain assessment and standards to include safe and judicious use of opioids with the topics focusing on acute pain, chronic pain and patients addicted to opioids
- **2016** AMA votes to drop pain as 5th vital sign and urges joint commission to stop requiring hospitals to assess pain relief in patient satisfaction surveys

Six Categories of Pain Treatment

1. Pharmacologic
2. Physical medicine
3. Behavioral medicine
4. Neuromodulation
5. Interventional
6. Surgical

Pain Intensity Scales

- Numerical rating scale
- Visual analog scale
- Brief pain inventory scale
- McGill pain questionnaire
- Neuropathic pain scale
- SLANSS
- DN4

Treatment of Chronic Pain

- Non-opioid therapy is the preferred treatment for chronic pain outside of cancer, palliative or end of life care
- If opioids are prescribed, choose the lowest effective dosage to reduce risk of opioid use disorder and overdose
- Exercise caution when prescribing opioids
- Patients who are prescribed opioids should be monitored closely

Non-Opioid Pain Management

- There is no long term benefit of opioids compared to non-opioids
- Extensive evidence showing possible harms including opioid use disorder, overdose and MVA
- Many non-opioid treatments have benefits without harms
- If opioids are used, they are always to be with a combination of non-opioid therapy

Non-Pharmacologic Therapy

- Weight loss
- Exercise – especially Yoga and Tai Chi
- Cognitive behavioral therapy (CBT)
- Acupuncture
- Chiropractor
- Massage
- Physical therapy
- Relaxation: Meditation and mindfulness
- Cold and heat
- Cold laser therapy
- TENS, spinal cord stimulator, deep brain stimulator
- Biofeedback

Interventional Treatments

- Epidural
- Joint injections including facet for neck and back pain, sacroiliac and large joints
- Sympathetic blocks
- Radiofrequency ablations
- Spinal cord stimulators- neuropathic pain
- Ziconatide pumps

Non-Opioid Medication

- NSAID
- Acetaminophen
- Anti-convulsants: Gabapentin, pregabalin, carbamazepine especially for neuropathy, post-herpetic neuralgia and fibromyalgia
- Anti-depressants: TCA, and SNRI's depression can worsen pain, duloxetine is approved for neuropathy and fibromyalgia
- Topical agents: Lidocaine, Capsaicin, NSAIDs
- Steroid injections
- Muscle relaxants like tizanidine, baclofen
- NMDA receptor antagonists like dextromethorphan, ketamine, methoxetamine
- Alpha 2 adrenergic agonists: clonidine, dexmedetomidine, tizanidine
- Ziconotide intrathecal or botulinum toxin
- Anti-spasmodics: benzodiazepines, botulinum toxin, cannabinoids

NMDA Receptor Antagonists

- NMDA is a receptor for excitatory neurotransmitter glutamate which is released with noxious peripheral stimuli causing hyperalgesia, neuropathic pain and reduced function of opioid receptor
- Ketamine, dextromethorphan, memantine, amantadine, methadone
- Works by preventing tolerance to opioids
- May have CNS side effects such as hallucinations, nightmares, out of body sensation, dizziness, respiratory depression

Alpha 2 Agonists

- Produce sedation, analgesia and euphoric effects
- Dexmedetomidine, clonidine, tizanidine
- Increase pre-synaptic inhibition of motor neurons in brain and spinal cord
- No respiratory depression

Ziconotide (Prialt)

- Calcium channel blocker
- Side effects can be severe psychiatric symptoms, neurologic impairment (which may appear gradually), elevated CPK with myositis, and meningitis
- Used for patients with severe chronic pain requiring intrathecal therapy

NSAID's Considerations

- Chronic kidney disease and advanced age
- Peptic ulcer disease
- Concurrent glucocorticoid use
- Hepatic disease
- Cardiovascular disease: consider naproxen first
- COX-2 inhibitors like celecoxib are better for patients at risk for gastropathy

Migraines

Acute treatments:

- Acetaminophen
- NSAIDs
- Anti-nausea: Zofran, Phenergan
- Triptans

Preventative:

- Beta blockers
- TCA
- Anti-seizure medications
- Calcium channel blockers
- Avoiding triggers
- CBT, Relaxation, biofeedback, exercise
- TCA and SNRI
- Botox

Fibromyalgia

- Non-pharmacologic treatments: exercise, CBT, biofeedback
- Initial therapy with amitriptyline 10mg HS or desipramine with increase of 5mg every two weeks with max of 75mg
- Cyclobenzaprine 10mg HS
- Pregabalin, duloxetine, milnacipran (Savella) are second line agents
- SNRI's like duloxetine started at 20mg in am up to 60mg daily or milnacipran 12.5mg in am up to 50mg bid
- Pregabalin starting at 25-50mg at HS with max of 450mg daily

Neuropathic Pain

- Results from damage or pathology of the nervous system
- A few examples include diabetes, post herpetic neuralgia, CVA
- Common first line treatments include anti-depressants (like TCA and SNRI), calcium channel blockers, alpha 2 ligands (gabapentin, pregabalin), along with topical agents like lidocaine
- Second line agents are Valproic acid, opioids and Tramadol
- Third line includes NMDA antagonists, combination therapy and muscle relaxants
- Fourth line includes botulinum or ziconotide

Osteoarthritis

- Exercise
- Weight loss
- Acetaminophen, NSAID, topical NSAIDs
- Hyaluronic acid injections, Capsaicin, glucocorticoid injections
- Cold and heat

Chronic Back Pain

- Focused history and targeted physical exam to exclude serious pathology like infection, malignancy or cauda equina syndrome
- Early imaging does not change outcomes
- After 3 months, move to controlling symptoms not cure
- Disability is associated with preexisting psychologic conditions, other chronic pain syndromes, job dissatisfaction, and compensation disputes
- Use evidence based guidelines – not unproven interventions like corsets or traction
- Focus should be on non-pharmacologic treatments like stress reduction, EMG, CBT, spinal manipulation, relaxation, or acupuncture

Chronic Back Pain…*continued*

- Return to normal activities as soon as possible with movement based therapy like Tai chi, yoga, relaxation techniques, or CBT based exercise therapy
- Medium firm mattress
- Massage, acupuncture, spinal manipulation, multi-disciplinary program
- Controversy over steroids with Oregon's health evidence review commission recommending against all steroid injections for low back pain
- NSAID with or without non-benzodiazepine muscle relaxant
- Second line agents are tramadol or duloxetine
- Opioids are considered last

Opioids for Chronic Pain

- Is pain severe, ongoing, or recurs frequently?
- Diminishes function or quality of life?
- Unrelieved by non-opioids
- No studies support use of opioids over non-opioids in non-cancer pain

Opioid Use

- **CDC** guidelines recommend non-opioid therapy for chronic pain outside of cancer, palliative care and end of life.
- Use lowest possible dose
- Exercise caution when prescribing and monitor closely
- Acute pain should be treated with lowest effective dose with short acting opioids or immediate release for 3 days only
- 24 states have now enacted laws to limit supply from 3-14 days
- The longer the prescription is past 5 days, the greater likelihood of chronic use
- 1 in 7 continue to use after one year if a second prescription is provided
- Review patient's history of controlled substance uses in PDMP

Opioid Use

- Set goals for pain management and assess baseline pain and function with reassessment 1-4 weeks after starting
- Only renew if clinically significant improvement in pain and function
- Monitor with PDMP and urine drug tests
- Calculate morphine milligram equivalents (MME):
  - if >50 hydrocodone or > 33 of oxycodone follow closely
  - if > 90 MME, refer to pain specialist

Treatment end points should be:

- **S** (specific)
- **M** (measurable)
- **A** (attainable)
- **R** (relevant)
- **T** (time limited)

Problems with Opioids

- Prescription opioid abuse results in 1 death every 36 minutes
- Common side effects include nausea, vomiting, constipation with potential of respiratory depression

Opioids should be started as a trial and discontinued if harms outweigh benefits

Safe Opioid Use

- Identify high risk patients
- Monitor high risk patients
- Use Physician Drug Monitoring Program (PDMP) databases
- Educate patients on safe use, storage and disposal of opioids
- Identify patients addicted to opioids and facilitate treatment
- Narcan for high risk patients
- Treat underlying psychiatric conditions

Screening Prior to Prescription

Use screening tools to assess risk of abuse: CAGE, SOAPP (Screener and Opioid Assessment for Patients with Pain), ORT (Opioid Risk Tool) PMQ (Pain Medication Questionnaire)

Be aware of red flags such as:

- ❑ Doctor shopping, drug hoarding
- ❑ Aggressive demand for more drugs
- ❑ Asking for specific drugs
- ❑ Suspicious medication "loss"
- ❑ Frequent telephone calls
- ❑ Use of opioids for non-prescribed indications such as anxiety or insomnia
- ❑ Frequent ER visits

Substance Abuse Disorder

- Harmful or hazardous use of a psychoactive substance leading to impaired control, social impairment, or risky use
- 15 million people have opioid dependence with a strong desire and persistent use of opioids with impaired control despite harmful consequences
- Repeated drug use leads to changes in brain structure causing problems with judgement, decision making, learning, memory and behavior control
- Causes health problems, disability, failure to meet major responsibilities
- Physical withdrawal and tolerance

Substance Abuse Disorder

- Opioids are gateway drug to heroin use
- 80% of heroin users first used prescription opioids
- Drug overdose from opioids increased by 200% since 2000
- Opioid overdose is now the number one cause of accidental death in the US

Substance Abuse Disorder - Screening

- Use screening tools for opioid use disorder risk assessment
- Use the CDC control checklist:

Risk Factors

- ❑ Nonfunctional status due to pain
- ❑ Exaggeration of pain
- ❑ Unclear etiology of pain
- ❑ History of rapid opioid dose escalation
- ❑ Younger age
- ❑ Smoker
- ❑ Poor social support
- ❑ HX of substance abuse
- ❑ Family HX of substance abuse
- ❑ Psychological stress, trauma or disease
- ❑ Psychotropic drug uses
- ❑ Focus on opioids
- ❑ Sexual abuse
- ❑ Legal problems
- ❑ Previous substance abuse treatment
- ❑ Craving for prescription drugs
- ❑ Moods swings
- ❑ Childhood adversity
- ❑ Poor social environments

Increased Risk of Respiratory Depression

- Middle age or older
- Substance abuse HX
- Comorbid mental illness
- High opioid dose
- Methadone, benzodiazepines, antidepressants
- Unemployment
- Recent release from prison or abstinence based addiction TX
- Heart or lung disease
- Sleep apnea

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