Opioid Prescribing: Avoiding Pitfalls and Employing Safe Strategies

Essentials in Pain Management: Update 2017
Michael Weinberger MD
The Problem
Overdose Deaths Involving Opioids, United States, 2000-2015

Sources:
91 Americans die every day from an opioid overdose (that includes prescription opioids and heroin).
Age-adjusted opioid-related overdose deaths,\textsuperscript{a} 1999-2015

Deaths per 100,000

Year

Prescription opioid overdose deaths

Illicit opioid overdose deaths
The Problem
Drug Overdose Deaths

• 2015 52,404
• 2016 64,070

• 20% increase

• Fentanyl related deaths
  • 2015 < 10,000
  • 2016 >20,000
    – JAMA 10/11/2017
    – MMWR 2016
The Problem Economics

• Estimated 2,000,000 people in U.S. have opioid use disorder associated with prescription opioids
• Estimates economic cost $78,000,000,000 annually

— Florence et al Med care 2016
The Problem
Opioid Prescriptions in the U.S.

• 2010 peak 782 MME per capita
• 2015 640 MME per capita
• 2010 81 prescriptions/100 people
• Amount of Opioids prescribed in 2015 3 X higher than 1999
• 4 X higher than in Europe

• Schuchat JAMA 2017
Opioids
The Problem

• How did we get here?
“The goddess Isis gave the juice of the poppy to Ra, the sun god, to treat his headache”

The Ebers Papyrus
1552 B.C.E.
History

• Isolation of Morphine and Codeine from Opium – Sertturner 1804
• Morphine commercially available 1827
• Manufacture of Diacetylmorphine – Bayer company late 1874
• Discovery of Opioid receptor – Pert and Synder 1973
Opioids in History

• Late 19th century opiates and cocaine use in patent medicinals, herbals and tonics.
• Beginning 20th century opium cheap and widely available
• 1914 Harrison Narcotic Act restricts use of opioids to medication prescribed by a physician
• 1919 Supreme court forbid prescribing opiates in addiction treatment
Opioids in History

• **1970 Controlled Substance Act**
  – 5 schedules
  – Schedule 1 drugs with high addiction liability and no medical usefulness
    – e.g. heroin
  – Schedule 2-5 drugs with recognized medical use and some degree of addiction liability
  – Imposed manufacturing quotas on controlled substances
    – To prevent diversion present in 1950 - 60s
ADDICTION RARE IN PATIENTS TREATED WITH NARCOTICS
JANE PORTER
HERSHEL JICK, M.D.

• Recently, we examined our current files to determine the incidence of narcotic addiction in 39,946 hospitalized medical patients who were monitored consecutively. Although there were 11,882 patients who received at least one narcotic preparation, there were only four cases of reasonably well documented addiction in patients who had no history of addiction. The addiction was considered major in only one instance. The drugs implicated were meperidine in two patients, Percodan in one, and hydromorphone in one. We conclude that despite widespread use of narcotic drugs in hospitals, the development of addiction is rare in medical patients with no history of addiction.

• NEJM 1/10/1980
Opioids and History
Times are a Changing

• Chronic use of opioid analgesics in non-malignant pain: report of 38 cases
Unrelieved Pain:
Extent of the Problem

• 1992 AHCPR Clinical Practice Guideline for Acute Pain Management suggest routine IM orders leave greater than 50% of postop patients with unrelieved pain

• 70% of long term nursing home patients reported pain. 66% intermittent, 34% chronic.

Road map to Effective Pain Therapy: JCAHO

• New standards in pain management published in 2000/2001

• Developed with American Pain Society

• Apply to
  – Ambulatory Care, Hospital, Home Care, Long Term Care, Behavioral Health Care
Change in the Landscape

• Opioid Prescriptions increased by more than 300% between 1999 and 2010
  » Kunins et al Ann Int Med 2013

• Retail sales of opioid medications increased from 50.7 million grams 1997 to 126.5 million grams 2007
  » Manchikanti et al. Pain Physician 2010

• US consumes 80% of global supply of opioids, 99% of hydrocodone

• Average per person Opioid sales 74 mg in 1997 to 369 mg in 2007
Change in the Landscape

• Steep rise in unintentional drug overdoses beginning in 1990s
• 2007 unintentional deaths from drug overdose 27,658
  – 2nd leading cause of accidental death
  – 11,499 from opioid overdose
    • More than heroin and cocaine combined
• ER visits for opioid abuse doubled from 2004 to 2008
• Substance abuse admissions to treatment programs increased by 400% 1998 to 2008
  » Okie NEJM 2010
The Problem:

• More than 31 million Americans aged 12 or older have engaged in illicit (non-medical) use of pain relievers during their lifetime
  – SAMHSA, HHS Survey on Drug Use and Health 2004
Trends in Medical Use and Abuse of Opioid Analgesics
Joranson et al JAMA 2000;283:1710-1714

• Data 1990 - 1996
• DAWN
  – Drug Awareness Warning Network
• ARCOS
  – Automation of Reports and Consolidated Order Systems
A Reassessment of Trends in the Medical Abuse of Opioid Analgesics and Implications for Diversion Control: 1997-2002
Gilson et al JPSM 2004; 28

• 120% increase in Abuse mentions by DAWN for Opioid Analgesics
  – Illicit drug use increased by 38%

• 1997 54,116 mentions
  – 5.4% of all DAWN mentions

• 2002 119,184 mentions
  – 9.85% of all DAWN mentions
Opioids for CNMP
Efficacy Data

• 26 RCT studies
• Analgesic efficacy in chronic pain
  – “measured pain scales from RCTs show statistically significant improvement across all studies, both in the case of painful arthritides and neuropathic pain”
  – “neuropathic pain is opioid responsive, although larger doses are required”
  – Most trials short term, only 1 reached 32 weeks
  – Doses moderate, up to 180 Morphine or equivalents per day (one study 660 MS equivalents)
  – Mixed results on function

• Ballantyne et al Clin J Pain 2008
Cochrane Collaboration
Opioids for LBP 2013

• N = 15 trials, 5540 patients
• Tramadol better than placebo for pain (low QE) and function (moderate QE)
• Buprenorphine no benefit
• Strong opioids better than placebo for pain (MQE) and function (MQE)

• High drop out rates, Short Duration, Limited Interpretability of improved function
• Effect Size generally moderate for pain and small for function
Cochrane Collaboration
Opioids for Neuropathic Pain 2013

• N = 31 trials
  – 17 studies report efficacy over 24 hours for acute exposure
  – 14 studies for duration up to 12 weeks
    • 33% pain relief in 57% active vs. 34% placebo
    • NNT 4
    • 50% pain relief 47% active vs. 30% placebo
    • NNT 5.9
Association Between Opioid Prescribing Patterns and Opioid Overdose-Related Deaths
Bohnert et al JAMA 2011

• VHA data 2004-2008
• Opioid overdose deaths, case-cohort design
• N = 750 deaths, N = 154,684 receiving opioids for pain
• Fatal overdose rate for those treated with opioids 0.04%
• Risk of overdose directly related to maximum daily prescribed daily opioid dose (100 + MS)
• No association with ATC and PRN Dosing
Does Opioid Therapy Lead to Abuse?
Fishbain et al. Pain Medicine 2008

• 67 studies, chronic pain patients receiving chronic opioid therapy

• 24 studies abuse/addiction
  – N = 2507 chronic pain patients
  – Abuse addiction rate 3.27%
  – Preselected for prior/current history of opioid abuse. Abuse/Addiction rate 0.19%

• 17 studies Aberrant Drug Related Behavior
  – N = 2466 chronic pain patients
  – ADRB 11.5%, Preselected 0.59%
Opioids
Strategies for Success

Individual
Population Based
Opioids
Strategies for Success
The Patient

• Opioids?
  – “Just Say No”
  – Alternatives
    • Pharmacologic Alternatives
      – NSAIDS, Anticonvulsants, Antidepressants, Marijuana
    • Complementary Techniques
      – PT, Acupuncture, Massage, Biofeedback
    • Interventional Techniques
      – Injections, SCS
Opioids
Strategies for Success
The Patient

• Opioids +
  – History
    • Pain history
    • Impact on Function
    • Social History
      – Substance Use/Abuse
    • Psychiatric History
      – Anxiety, Depression, Trauma
    • Medications
      – Increased Risk with Sedative Hypnotics
• Sleep Apnea Screen
• Medical
  – Age, Renal, Hepatic, Pregnancy
• Goals of Care
• Drug Screen
  – Saliva, Urine
  – Wait for results
• PMP
• Communication
  – Family
  – Current/Prior Treating Health Care Providers
  – Social Media
• Contract
  – Establish Ground Rules
  – Establish Goals of Care
    • One Provider
    • One Pharmacy
    • Early refills
    • Abnormal/Unexpected Drug Screen
  – Trial of Opioids

Review Adverse Effects
  Risks
  Endocrine
  Immunologic
  Hyperalgesia
  Driving
Does Opioid Therapy Lead to Abuse?
Fishbain et al. Pain Medicine 2008

• Urine Toxicology
  — 5 studies
  — N = 15,442
  — 20.4% no prescribed opioid in urine and/or nonprescribed opioid

  — 5 studies, n = 1965
  — 14.5% urine positive for illicit drug

— Conclusion
  • Chronic Opioid Exposure lead to abuse/addiction in small percentage, ADRB/illicit drugs larger percentage
Laboratory Monitoring

- Monitor for adherence
- Monitor for illicit drug use
- Monitor for unknown drug use
Opioid Agreement

- Little data to support their efficacy for reducing misuse of opioid analgesics
  - Dunbar and Katz JPSM 1996
    - No benefit in 20 pts with history of substance abuse using opioids for chronic pain
  - Saxon
    - Contract most effective in patients with history of substance abuse when terms are specific and increased responsibility on patient
      - Drug alcohol Depend 1993;31: 205-214
Prescription Drug Monitoring Programs

• Impact of Prescription Monitoring Programs and pill mill laws on high risk opioid prescribers
  – Top 4% of prescribers in # RX and Total opioid volume, in Fla and Ga, had greatest drop in prescribing after laws introduced
  – Little impact on “low risk Providers”
    • Chang et al Drug and Alcohol Dependence 2016
Opioids
Strategies for Success
The Patient

• Initiation of Opioids
  – Short Acting Only
    • No benefit pain or function IR vs ER
    • Increased risk of nonfatal OD ER vs IR in first two weeks
  – Avoid Sedative Hypnotics
  – Dose Risk Reduction
    • 1-20 MME/day
    • 50 –< 100 MME/day increase opioid overdose risk 1.9 to 4.6
    • > 100 MME/day increase risk 2.0 – 8.9

  Gomes et al Arch Int Med 2011
  Bohnert et al JAMA 2011
Opioids
Strategies for Success
The Patient

• Lowest Effective Dose
• Acute Pain
  – 3/7 day supply
  – Partial Fill
  – Predict Actual Need

Chronic Pain
  Assess at 1-4 weeks
  Avoid High Risk Populations
  Elderly, Pregnancy, Renal/Hepatic Disease, Substance Abuse, Major Depression
  Avoid Methadone, Benzodiazepines
  Buprenorphine
Opioids
Strategies For Success

- Patient On Chronic Opioids
  Dose Reduction/Tapering
    - 16 studies have found benefits in pain, function and QOL with dose reduction requires buy-in from patient
  Motivational Interviewing
    - focus on benefits and side effects allow patients to realize downsides to therapy
      - Frank et al. Ann Int Med 2017
Opioids
Strategies For Success

• Naloxone
  – Nasal Spray
  – IM
  – No Rx needed in NY
  – Co pay $40 paid by Naloxone Co-payment Assistance Program in NY
  – Available to patients and family members
Opioids
Strategies For Success
Population Based

• Health Care System Approaches
  – Limiting Doses, Days of Prescriptions, Access to Certain Medications

• State Based Approaches
  – Partial Fill Rx
  – MMP
  – Limits on Pill #, Days of Rx

• Insurance Based
  – Limiting Doses
    • 90 MME
      Limiting Access to Specific Opioids
Opioids
Strategies For Success
Populations/Systems

• Safer and More Appropriate Opioid Prescribing: a large healthcare system’s comprehensive approach
  – Kaiser Permanente
  – Goals
    • Reduce opioid-acetaminophen > 200/Rx
    • Reduce Rx > 120 MME per day
    • Reduce opioid and benzodiazepine combinations
    • Reduce use ER oxycodone and oxymorphone
    • Track Methadone
    • Reduce Brand
• Intervention
  – Organizational Support
  – Automated Decision Support
  – Prescribing and dispensing policies
  – Individual Feedback

• Outcome
  – 30% reduction in high dose opioids
  – 98% reduction in Rx > 200 pills
  – 90% decrease in opioids with benzodiazepines or carisoprodol
  – 72% reduction in ER opioid Rx
  – 95% reduction in branded opioid – acetaminophen products

• Losby et al J of Evaluation in Clinical Practice 2017
Opioids
Strategies For Success
Populations/Systems

• DOHMH NYC
• Staten Island
  – Opioid analgesic overdose deaths
  – 267% increase 2000 to 2011
  – 0.9 to 3.3 / 100,000
  – # times higher than any other borough in 201
• SI
  – Higher per capita rates of opioid prescriptions and high
dose Rx (> 100 MME),
  – Longer median Prescription Duration

• Kattan et al Public Health Practice 2016
Opioids
Strategies For Success
Populations/Systems

• DOHMH public health detailing campaign 2013

• Opioid Rx Guidelines
  – 3 day supply opioids for acute pain
  – Avoid opioids for noncancer pain
  – Avoid high dose opioids (>100 MME)

• Outreach
  – Physician Conferences at Hospitals
  – Office Detailing
Opioids
Strategies For Success
Populations/Systems

• High dose prescribing rate decreased in all boroughs but greater decrease in SI
• If in doubt get help
  – Addiction Medicine
  – Pain Medicine
  – Psychiatry
  – Sleep Medicine

  – CDC Guidelines for Prescribing Opioids for Chronic Pain  JAMA 2016
On the horizon

• New Opioid/ Analgesics
  – Selective Action at Mu Receptor
    • Beta arrestin
  – Kappa Receptor Antagonists