Pearls in Chronic Pain Management

ROBERT HAUPTMAN MD
PAIN CONSULTANT
HEALTHPOINTE CLINIC
ASSISTANT CLINICAL PROFESSOR U OF A
Faculty / Presenter Disclosure

- **Faculty:** Robert Hauptman MD
  - Pain Consultant HealthPointe Clinic
  - Assistant Clinical Professor U of A

- **Relationships with commercial interests:**
  - Grants / research support: None
  - Speakers bureau / honoraria: AZ, GSK, BI, Pfizer, Merck, Abbott, Valeant, Paladin, Bayer, Purdue
  - Consulting fees: AZ, GSK, BI, Purdue
  - Other: Past President AMA Section of Chronic Pain and Pain Society of Alberta
Objectives

- To review the problem of chronic pain in Canada
- To discuss some pearls in chronic pain management that I have found useful in my practice
Issues and Concerns

1 in 5 Canadians suffer from moderate/severe chronic pain

~1% of Canadians using opioid pain relievers report using them to get high

1 in 3 cancer survivors have chronic pain after curative treatment

~12% of Ontario students report using a prescription opioid nonmedically in the past year

Universality of access to pain management without discrimination

### Health Consequences

#### Health Consequences of Under-Treated Pain:

- **Biophysical:** fatigue, insomnia, sexual dysfunction, consequences of de-conditioning, inability to concentrate
- **Psychological:** increased risk of suicide, depression/anxiety, hopelessness
- **Social:** impaired relationships, social isolation
- **Functional:** impaired driving ability, decreased functional capacity, underemployment, increased health care costs

#### Health Consequences of Opioid Misuse/Abuse:

- **Biophysical:** physical consequences of substance use, function
- **Psychological:** depression/anxiety, psychic distress
- **Social:** erosion of family/social relationships
- **Functional:** underemployment, legal concerns
- **Spiritual (broadest sense):** person is not living life in accordance with his or her core values
Pearl 1

- Structure does not matter
The Chemistry of Physiologic Pain

Tissue damage, Inflammation, Nerve compression

5-HT, Bradykinin, Cytokines, Histamine, Prostaglandins

Opioids, 5-HT, NE, GABA

EAAs → NMDA receptors
SubP / NGF / NK1 / CGRP / NO
CCK  Dynorphine A

Attention
Expectation
Affect

Na
Chronic Pain Pathways

No tissue damage
Abnormal Na Channels
Spontaneous pain

5-HT, Bradykinin, Cytokines, Histamine, Prostaglandins

Impaired Descending Pathways
Opioids, 5-HT, NE, GABA

EAAs NMDA receptors
SubP, NGF, NK1, CGRP, NO

Neuronal plasticity

Altered Perception Impaired Pain Processing

Peripheral Sensitization Central

CCK = cholecystokinin; 5-HT = 5-hydroxytryptamine; NE = norepinephrine; GABA = γ-aminobutyric acid; EEA = excitatory amino acid; NMDA = N-methyl d-aspartate; SubP = substance P; NGF = nerve growth factor; NK1 = neurokinin 1; CGRP = calcitonin gene-related peptide; NO = nitric oxide.
Understanding Pain in < 5 minutes
Pearl 2

- Stop imaging chronic pain patients
- You may be doing more harm than good!!
Reasons to Image…

- Red Flags
- Pre-operative assessment in a patient considered a surgical candidate
- Prior to interventional therapies

NOT FOR DIAGNOSIS

- Chronic pain cannot be imaged
“…scans show structure, patients report pain – they are not the same.”

Jon Norman, BMJ, 2005
Harms of Imaging

- Patient’s perceptions – I have “severe arthritis doctor”!!
- Worsens mood and pain
- Non compliance with treatment recommendations – “I can’t exercise because my knees are so bad”
Pearl 3

- We still need to touch our patients!!
- Location of pain generator
- Ruling out serious pathology
- Examining for dysfunction in the pain system
  - Allodynia
  - Hyperalgesia
  - Temporal summation
## Central Sensitization Exam

<table>
<thead>
<tr>
<th>Description</th>
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<tbody>
<tr>
<td><strong>Patient history</strong></td>
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<tr>
<td>Reports of pain that spread beyond the initial area of injury</td>
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<tr>
<td><strong>Primary/secondary brush allodynia</strong></td>
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<tr>
<td>Painful response to lightly brushing the skin inside the initial area of injury (primary) or outside of the area of injury (secondary)</td>
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<tr>
<td><strong>Temporal summation with wind up</strong></td>
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<tr>
<td>Repeated painful stimuli, like a pinprick (usually tested as 1 per second for 10 seconds) results in an augmented pain response so that following repetitive pinpricks the intensity of the pain rating at the end is graded much higher than a single stimulus</td>
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<tr>
<td><strong>After pain</strong></td>
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<tr>
<td>Describes the sensation when, after the pinprick is removed, patients continue to feel as if the pin is still in their skin</td>
</tr>
</tbody>
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Pearl 4

- Opioids can work in chronic pain
The findings of this systematic review suggest that proper management of a type of strong painkiller (opioids) in well-selected patients with no history of substance addiction or abuse can lead to long-term pain relief for some patients with a very small (though not zero) risk of developing addiction, abuse, or other serious side effects.

Noble M, et al. Cochrane Collaboration, Jan 2010
However, the evidence supporting these conclusions is weak, and longer-term studies are needed to identify the patients who are most likely to benefit from treatment.

Noble M, et al. Cochrane Collaboration, Jan 2010
Evidence for Amitriptyline in Neuropathic Pain

- Amitriptyline has been a first-line treatment for neuropathic pain for many years. The fact that there is no supportive unbiased evidence for a beneficial effect is disappointing …..

- Amitriptyline should continue to be used as part of the treatment of neuropathic pain, but only a minority of people will achieve satisfactory pain relief.

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European Pain Federation position paper on appropriate opioid use in chronic pain management


1 Marymount University Hospital & Hospice, Curraheen, Cork, Ireland
2 Cork University Hospital, Wilton, Cork and College of Medicine and Health, University College, Cork, Ireland
3 Department of Drug Design and Pharmacology, University of Copenhagen, Denmark
4 Mech-Sense, Department of Gastroenterology & Hepatology, Aalborg University Hospital, Denmark
5 Edinburgh Cancer Research Centre, University of Edinburgh, UK
6 Department of Special Anaesthesia and Pain Therapy, Medical University of Vienna/AKH, Austria
7 Balliol College, Oxford, UK
8 Department of Clinical Pharmacology and Pharmacoepidemiology, University Hospital, Heidelberg, Germany
9 Leuven Centre for Algology & Pain Management, University Hospital Leuven, Belgium
10 Pain Functional Unit, University Hospital HM Madrid, Spain
11 Department of Anesthesiology, Intensive Care and Pain Medicine, University Hospital Muenster, Germany
12 Paolo Procacci Foundation, Rome, Italy
13 Pain Matters Ltd, Liverpool, UK

Abstract

Poorly controlled pain is a global public health issue. The personal, familial and societal costs are immeasurable. Only a minority of European patients have access to a comprehensive specialist pain clinic. More commonly the responsibility for chronic pain management and initiating opioid therapy rests with the primary care physician and other non-specialist opioid prescribers. There is much confusing and conflicting information available to non-specialist prescribers regarding opioid therapy and a great deal of unjustified fear is generated. Opioid therapy should only be initiated by competent clinicians as part of a multi-faceted treatment programme in circumstances where more simple measures have failed. Throughout, all patients must be kept under close clinical surveillance. As with any other medical therapy, if the treatment fails to yield the desired results and/or the patient is additionally burdened by an unacceptable level of adverse effects, the overall management strategy must be reviewed and revised. No responsible clinician will wish to pursue a failed treatment strategy or persist with an ineffective and burdensome treatment. In a considered attempt to empower and inform non-specialist opioid prescribers, EFIC convened a European group of experts, drawn from a diverse range of basic science and relevant clinical disciplines, to prepare a position paper on appropriate opioid use in chronic pain. The expert panel reviewed the available literature and harnessed the experience of many years of clinical practice to produce these series of recommendations. Its success will be judged on the extent to which it contributes to an improved pain management experience for chronic pain patients across Europe.

Significance: This position paper provides expert recommendations for primary care physicians and other non-specialist healthcare professionals in Europe, particularly those who do not have ready access

Funding sources
The project was funded in full by EFIC – European Federation of IASP Chapters.
EFIC: Position Paper

- Opioids are **indispensable** in our approach to pain management – there are no equivalent alternatives
- Opioid are both **safe and effective** when used appropriately by adequately trained clinicians
- **Withholding or withdrawing opioids will not cause a person to live longer** but will impact negatively on his/her overall level of comfort and quality of life.
**Literature Search Criteria:**
- Original articles
- ≥ 12 mo
- CNCP patients
- English language
- Through to September 2016
- Search in Medline, EMBASE, Biosis Previews and Pubmed using search terms: “long”, “opioid” and/or “therapy”

**Studies Included in Current Review**

- All Studies (n=269)
  - ≥ 12 Mo Studies (n=37)
    - Studies Assessed Safety (n=32)
    - Studies Assessed Pain (n=34)
    - Studies Assessed Pain + Function (n=19)
    - Studies Reported Dose-Adjustments (n=16)
    - Studies Reported Patient Satisfaction with Opioids (n=6)

**Excluded:**
- Non-original
- Study < 12 mo
- Non-English
- Not in CNCP patients

Average Pain Reduction in Studies (n=31)

EPI, Epidemiology; OL, Open Label; OLE, Open Label Extension

25/31 studies (80.6%) had ≥30% efficacy threshold
Opioids are generally safe and the most common side effects are predictable and manageable.
“Higher doses of opioid analgesics were associated with increased overdose risk, however, there were smaller incremental increases in risk above 200 mg average daily MME. Much of the risk at higher doses appears to be associated with co-prescribed benzodiazepines.”
Pearl 6

- Exercise works!
Exercise in Medicine Canada: Exercise Prescription and Referral Tool

Exercise Prescription & Referral

Name ____________________________
Date ____________________________ Age ____________________________

Relevant diagnoses ____________________________

Reduce Sedentary Behaviour
Move more / Sit less / Use stairs / Limit screen time

Physical Activity Recommendations

Aerobic / Cardiovascular Activity

Frequency
2 3 4 5 6 7 days / week

Intensity
Light  Moderate  Vigorous

Time
10 15 20 30 40 more minutes / session

Type

Strength / Resistance Activity

2 3 4 5 6 7 days / week

Example

Canadian Physical Activity Guidelines for Adults 18 Years and Older
To achieve health benefits, adults aged 18 years and older should accumulate at least 150 minutes of moderate- to vigorous-intensity aerobic physical activity per week, in bouts of 10 minutes or more. It is also beneficial to add muscle and bone strengthening activities using major muscle groups, at least 2 days per week. More physical activity provides greater health benefits.

Referral for Additional Exercise Assessment and Counseling

Name / Contact ____________________________
Follow-up / Other ____________________________

Your Health Professional

Name ____________________________ Signature ____________________________ Licence # ____________________________

What do we know about exercise?

- Exercise will make you feel good and can be fun!
- Exercise is effective. If exercise was a drug, it would be one of the most effective and safe ways to prevent and treat many chronic diseases such as heart disease, hypertension, diabetes, osteoporosis, anxiety disorders and depression!
- Exercise is safe for your joints. Regular low impact exercise and gradual muscle strengthening can stabilize and protect your joints from osteoarthritis and reduce the risk of falls and injuries that is associated with poor physical fitness.
- Improving fitness is more important than losing weight. Low cardiovascular fitness is associated with a much higher risk of disease and death than being overweight.
- Walking is free anywhere and any day of the year!

What about aerobic intensity and muscle strengthening?

How can I assess intensity?

- Light exercise will usually not cause adults to sweat and breathe harder. It is easy to have a conversation at this intensity. Walking is the typical example of light exercise.
- Moderate-intensity exercise will cause adults to sweat a little and breathe harder. It is possible to have a conversation in short sentences. Examples are brisk walking (as if you are late for the bus) and bike riding.
- Vigorous-intensity exercise will cause adults to sweat and be "out of breath". It is difficult to have a conversation. Examples are jogging, swimming laps, cross-country skiing and hiking on hills.

What is strength and resistance exercise?

- Strength and resistance exercises make your muscles work harder by adding weight or resistance to the movement.

For more information

You can consult your health professional, an exercise professional or visit the Resources page on exerciseismedicine.ca.

http://www.exerciseismedicine.ca/professional-resources
Tools for Prescribing Physical Activity

- Using the FITT principle:
  - Frequency
  - Intensity
  - Type of activity
  - Time
Words of Caution in Physical Activity Induction

- BEWARE the Rules of TOOs...
  - Too soon
  - Too much
  - Too fast
  - Too intense

- As with most prescriptions...
  - “Start low and titrate slow”
Cochrane Review

The available evidence suggests physical activity and exercise is an intervention with few adverse events that may improve pain severity and physical function, and consequent quality of life. However, further research is required and should focus on increasing participant numbers, including participants with a broader spectrum of pain severity, and lengthening both the intervention itself, and the follow-up period.

January 2017
Pearl 7

- Take another look at medical marijuana
CONCLUSION 4-1 There is substantial evidence that cannabis is an effective treatment for chronic pain in adults.
Restricting access or opioid prohibition does not save lives or reduce opioid abuse
Rates of OxyContin Abuse Before and After OxyContin Reformulation

1. Community activation and coalition building
2. Monitoring and surveillance of data
3. Prevention of overdoses
   - Education of patients and the community
   - Distribution of free naloxone kits + education video to identified high risk groups
4. Evaluation

Tool kit and face-to-face meetings with PCPs on managing CNCP and safe opioid prescribing

www.projectlazarus.org
Project Lazarus: Community-Based Overdose Prevention in Rural North Carolina

Project Lazarus and CPI - Overdose deaths down 69%, little change in opioid prescribing
Pearl 9

- Patients do get better – but it can take a lot of work!
- It is not just about meds!
6 Pillars of Pain Management

#1 Lifestyle
- Exercise
- Sleep & Nutrition
- Stress management
- Weight loss (if overweight)
- Social activities
- Employment or volunteering
- Hobbies

#2 Psychological
- Counselling
- Mindfulness
- Biofeedback
- Self-management
- Support groups

#3 Physical Therapies
- Physiotherapy
- Chiropractics
- Acupuncture
- Massage
- Osteopathy

#4 Interventional Therapies
- Injections
- Laser therapy
- TENS
- Surgery is a LAST resort in most cases

#5 Spirituality
- Meditation
- Praying/worship
- If you follow a religious belief system
- Nature

#6 Medications
- Are there to support you in working on the other 5 pillars.
- Pain medications are often only good for a 30% reduction in pain so don’t forget to do the rest!
Questions??