

# 51<sup>st</sup> Annual Course in Drug Therapy Virtual Edition

Managing Cancer Related pain

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## Disclosures

- No conflicts of interest

## Objectives

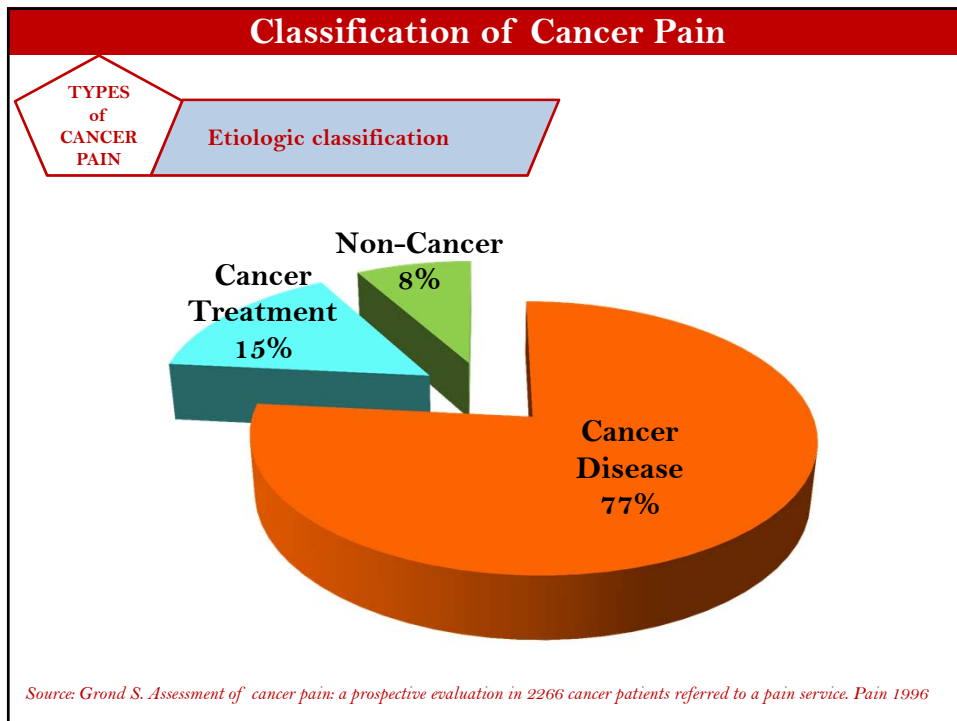
- Adjust pain medication
- Determine which patients need a referral to pain clinic
- Manage side effects of pain medication

Practice review: Evidence-based and effective management of pain in patients with advanced cancer  
Chapman et al: Palliative Medicine , 2020

What is already known about the topic?

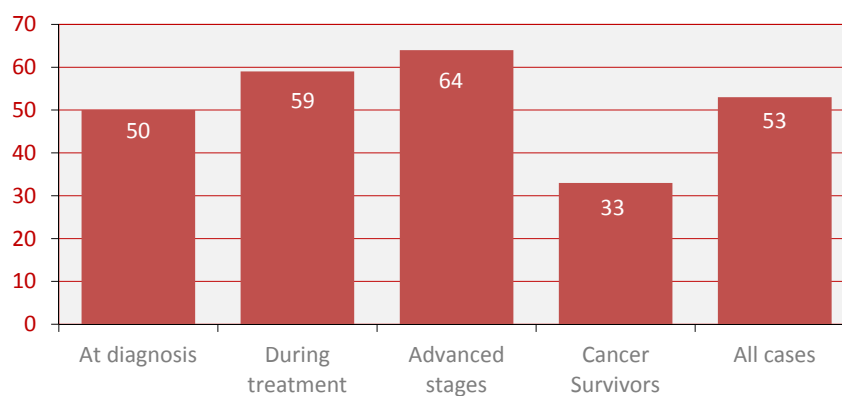
- • Pain is not adequately controlled in all patients with advanced cancer.
- There are no universally used guidelines for the treatment of pain in patients with advanced cancer.
- • Not all guideline recommendations are evidence-based

- Assess
- Classify
- Treat
- Reassess



## Prevalence and Importance

### Prevalence of pain at different stages of the cancer disease



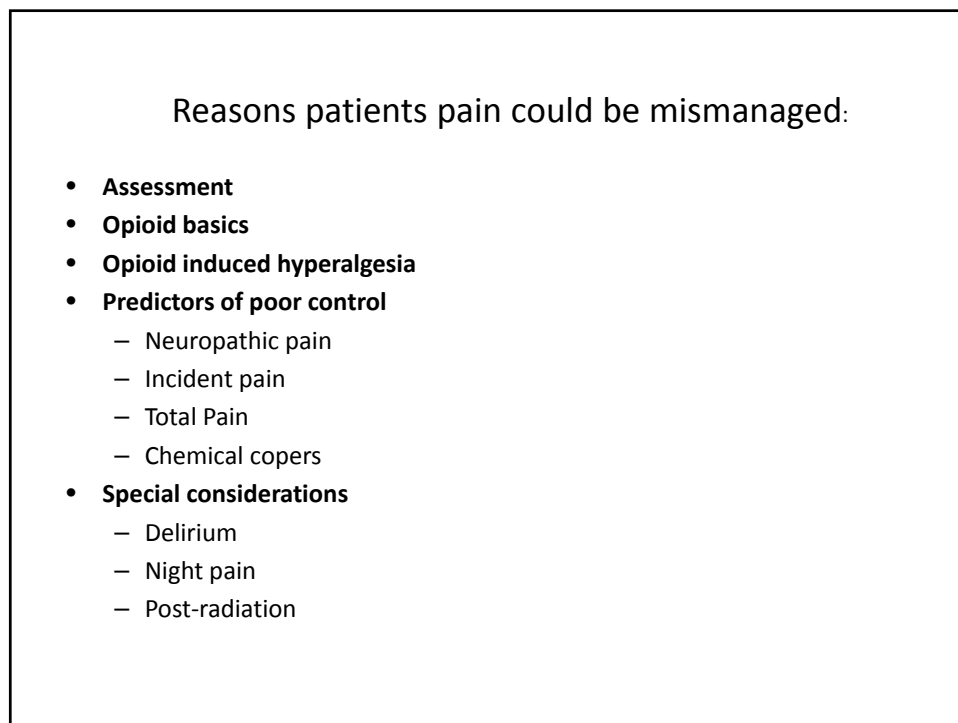
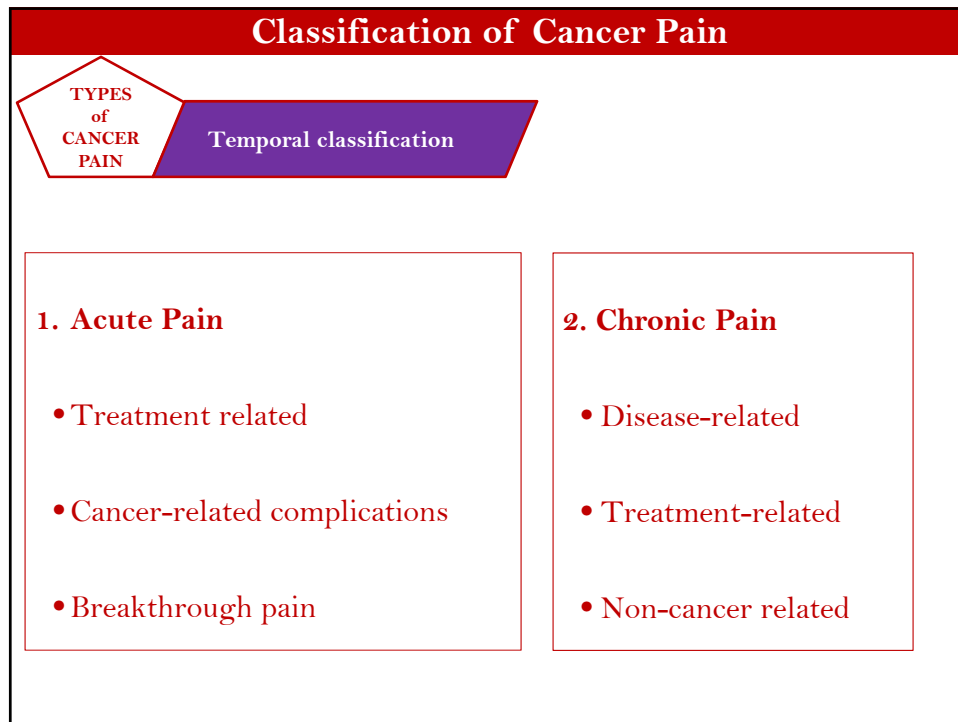
Source: Van den Beuken-van Everdingen MIJ. Prevalence of pain in patients with cancer: a systematic review of the past 40 years. *Annals of Oncology* 2007; 18: 1437-49

## Classification of Cancer Pain

TYPES  
of  
CANCER  
PAIN

### Pathophysiological classification

	Nociceptive Pain		Neuropathic Pain
	Somatic Pain	Visceral Pain	
<b>Location</b>	Localized	Generalized	Radiating or specific
<b>Patient Description</b>	Pinprick, stabbing, or sharp	Ache, pressure, or sharp	Burning, prickling, tingling, electric shock-like, or lancinating
<b>Mechanism of Pain</b>	A-delta fiber activity Located in the periphery	C Fiber activity Involved deeper innervation	Dermatomal (periphery), or non-dermatomal (central)
<b>Clinical Examples</b>	<ul style="list-style-type: none"> <li>• Periosteum, joints, muscles</li> <li>• Sickle cell</li> <li>• Superficial laceration</li> <li>• Superficial burns</li> <li>• Intramuscular injections, venous access</li> <li>• Otitis media</li> <li>• Stomatitis</li> <li>• Extensive abrasion</li> </ul>	<ul style="list-style-type: none"> <li>• Colic spasm pain</li> <li>• Appendicitis</li> <li>• Kidney stone</li> <li>• Chronic pancreatitis</li> <li>• IBS</li> <li>• Angina</li> <li>• Menstrual cramps</li> </ul>	<ul style="list-style-type: none"> <li>• Trigeminal neuralgia</li> <li>• Avulsion neuralgia</li> <li>• Posttraumatic neuralgia</li> <li>• Peripheral neuropathy (diabetes, HIV)</li> <li>• Limb amputation</li> <li>• Herpetic neuralgia</li> </ul>



## Assessment

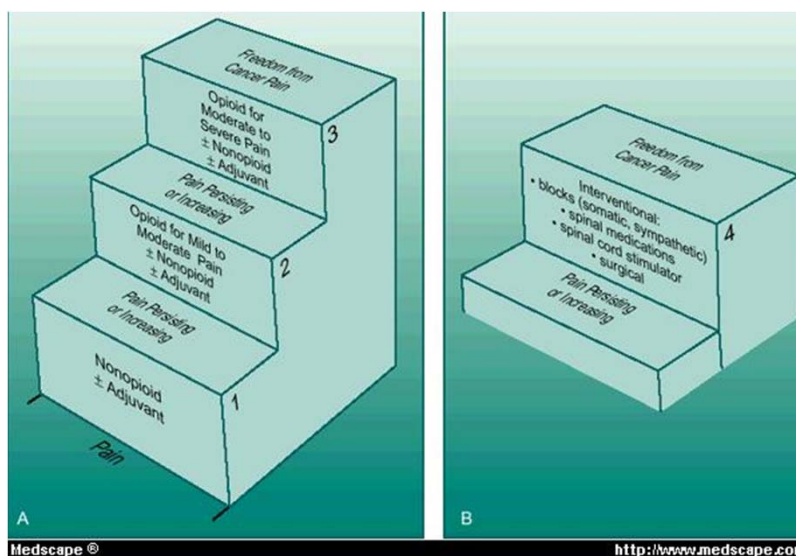
- Neurophysiology of cancer pain is complex; it involves inflammatory, neuropathic, ischemic, and compression mechanisms at multiple sites.
- Decide if a pain is nociceptive , neuropathic, visceral, or a combination of all three.
- Presence of several different sites of pain which may be caused by the cancer , treatment of cancer , general debility , concurrent disorders.

- A comprehensive assessment of pain must be carried out following any new reports of pain.
- Any new report of pain could indicate a change in the underlying pathological process and may require urgent medical attention.

## Assessment

- History
  - Persistent pain
  - Breakthrough pain
    - Transitory flare up of moderate to severe pain in patients with otherwise stable persistent pain.
  - Incident pain
- Psychosocial assessment
- Physical exam
- Diagnostic evaluation for signs and symptoms associated with common cancer pain syndromes.

## New Options for Cancer Patients: A 4th Step in the WHO Ladder?



## Equianalgesic Dosing

- All opioids can be made **equipotent or equianalgesic** by adjusting for physicochemical and pharmacokinetic differences by correcting for dosage and route of administration

## Comparative Efficacy and Safety of Long Acting Opioid for Chronic Noncancer Pain

JPSM Nov 2003

- Comparative efficacy of different long acting opioids
  - Comparative incidence and nature of side effects
- ....insufficient evidence to prove that different long acting opioids are associated with different efficacy or adverse event rates



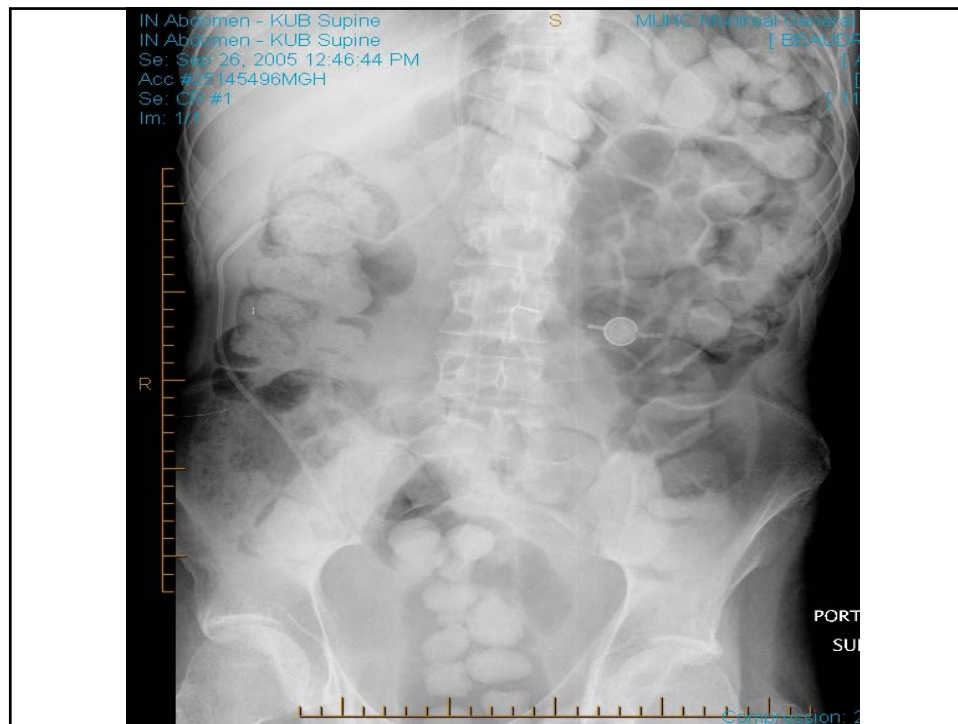
## Use of Strong Opioids in Advanced Cancer Pain : A Randomized Trial

JPSM 2004

- Patients started on strong opioids had significantly better pain relief than patients treated according to WHO guidelines.
- Significantly fewer changes in therapy.
- Safe and well tolerated
- Suggest utility of strong opioids for first line treatment of pain in patients with advanced cancer

## Equi-analgesic Doses

Opioid	MEDD	P.O.	S/C	BTA Dose	Comments
Morphine	1	30 mg	15 mg	10%	Standard
Hydromorphone	5X	6 mg	3 mg	10%	? Fewer side effects
Oxycodone	1.5X	20 mg	N/A	10%	Good starter since not available PO
Fentanyl Patch			15 mcg per hour	Tricky - 30 mcg	Fewer side effects?, Home care, renal failure
Codeine	10%				<b>Forget about it</b>
Methadone	1-10	????	N/A	10%	Renal failure, dosing - half life, neuropathic pain, drug interactions



## Opioid Neurotoxicity

- Myoclonus
  - Uncontrollable twitching and jerking
- Seizures
- Hallucinations
- Hyperalgesia
  - enhanced response to noxious stimulation
- Allodynia
  - Pain elicited by normal innocuous stimuli

## Opioid – induced abnormal pain sensitivity

Pain 2002

- Apparent opioid tolerance is not synonymous with pharmacological tolerance which calls for opioid dose escalation, but may be the first sign of opioid-induced pain sensitivity suggesting the need for opioid dose reduction

## Opioid Tolerance and Hyperalgesia in Chronic Pain Patients After One Month of Oral Morphine Therapy: A Preliminary Study

J Pain 2006

- Dose escalation
  - Tolerance
  - Progression of underlying disease
  - Post-op – depression, anxiety, pre-existing pain
  - ? Exposure to opioids – leading to increased sensitivity to pain

## Opioid Induced Hyperalgesia

- A form of pain sensitization induced by the drug.
- Unlike tolerance cannot be overcome cannot be overcome by increasing dosage.
- Pain is worsened by increased opioid dosing and improved by reducing or eliminating the opioid.

## Opioid Induced Hyperalgesia

- Will exacerbate a pre-existing painful condition and therefore will increase pain intensity above the pre-existent pain levels.
- Disease progression must be ruled out.
- Increased pain might be due to pseudo tolerance
- OIH produces diffuse pain, less defined in quality, which extends to other areas of distribution from the pre-existing pain.
- Increase in opioids will benefit patients with tolerance or pseudo tolerance and intensify pain if OIH.

## Predictors of poor control

- Incident pain

## Optimization of Opioid Therapy for Preventing Incident Pain associated with Bone Metastases

Mercadante JPSM Nov 2004

- Breakthrough pain is a transitory flare of pain superimposed on an otherwise stable pain pattern- normally severe with rapid onset.
- Incident pain is a form of breakthrough pain due to movement and is commonly associated with bone metastases and fractures.
  - Standing , walking , turning , lifting , coughing...

## Optimization of Opioid Therapy for Preventing Incident Pain associated with Bone Metastases

Mercadante JPSM Nov 2004

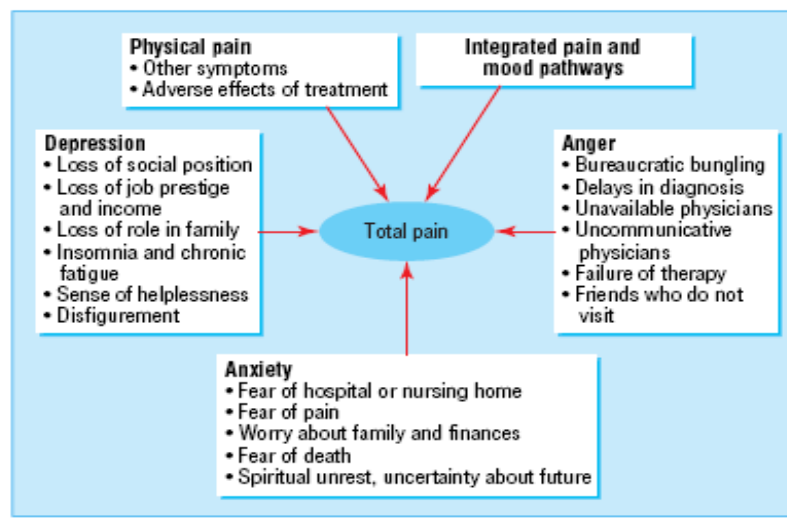
- No medication has such a rapid onset that it parallels this temporal pattern of pain.



## Incident Pain

- Be very careful about dose escalation
- Options
  - Radiation
  - Surgery
  - Bisphosphonates
  - Calcitonin
- Pre-medicate
  - Physio
  - T & P

## Predictors of poor control






## Predictors of poor control

- Chemical copers
  - Creative scheduling
    - ? Long acting
  - Q 2 – 4 h during day
  - Acetaminophen q4h
  - Ibuprofen q4h

## Special considerations

- Delirium
- Night pain
  - ? Delirium
  - ? Death anxiety
  - Consider adding or increasing HS sedation
- Post-radiation





Dr. R. Melzack                      Dr. B. Mount

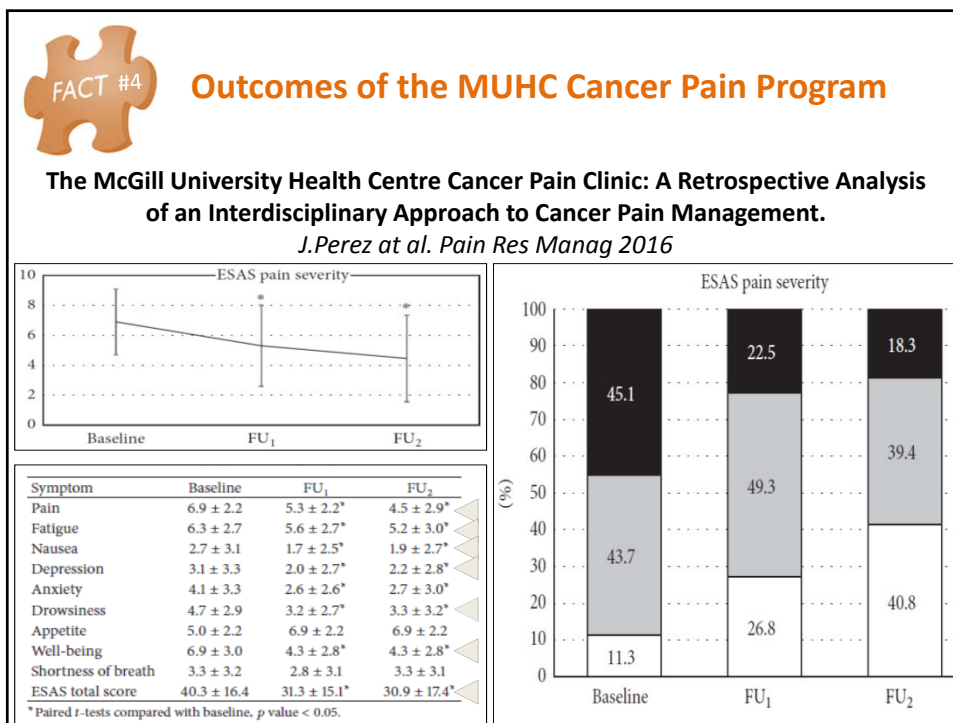
**MUHC Cancer Pain Program**

- Created five years ago as a clinical Alliance between MUHC Supportive and Palliative Care and MUHC Alan Edwards Pain Management Unit
- Supported by the Louise and Alan Edwards Foundation


## Criteria for Referral

- Cancer diagnosis
- Pain that is a result of the cancer and or its' treatment
- Basic pain management strategies have been tried

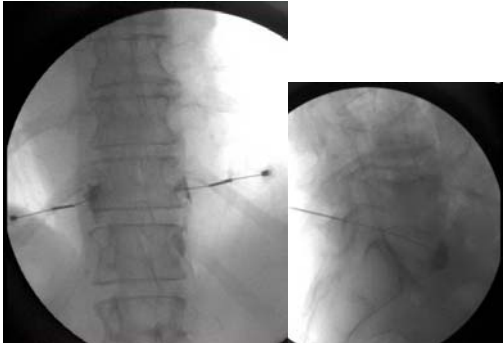
Objectives of MUHC Cancer Pain Program		
Clinical care	Training	Research
<ul style="list-style-type: none"> <li>❑ Assessment and management of cancer-related pain syndromes</li> <li>❑ Interdisciplinary care                             <ul style="list-style-type: none"> <li>▪ Palliative Care</li> <li>▪ Anesthesiology</li> <li>▪ Radiation Oncology</li> <li>▪ Interventional Radiology</li> <li>▪ Nursing</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>❑ Undergraduate training                             <ul style="list-style-type: none"> <li>▪ McGill Med School</li> <li>▪ McGill School of Nursing</li> </ul> </li> <li>❑ Postgraduate training                             <ul style="list-style-type: none"> <li>▪ Residents</li> <li>▪ Palliative care fellows</li> <li>▪ Chronic pain fellows</li> </ul> </li> <li>❑ Cancer Pain Fellowship</li> </ul>	<ul style="list-style-type: none"> <li>❑ Outcomes of interdisciplinary cancer pain approaches</li> <li>❑ Methadone</li> <li>❑ Cannabinoids</li> <li>❑ Interventional approaches</li> </ul>



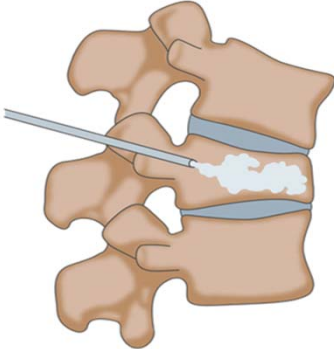
**FACT #4** **Interventional Cancer Pain Management**




**NEUROLYTIC PROCEDURES**




**CEMENT AUGMENTATION**



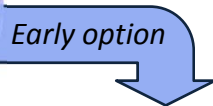
**FACT #4** **Interventional Cancer Pain Management**



*Last resort*



*Early option*



*Adequate pain management*

**4** Interventional pain procedures

*Pain persisting or increasing*

**3** Opioid for moderate to severe pain  
± Non-opioid  
± Adjuvant

*Pain persisting or increasing*

**2** Opioid for mild to moderate pain  
± Non-opioid  
± Adjuvant

*Pain persisting or increasing*

**1** Non-opioid  
± Adjuvant

**Pain**

*Adequate pain management*

**3** Opioid for moderate to severe pain

*Pain persisting or increasing*

**2** Opioid for mild to moderate pain

*Pain persisting or increasing*

**1** Non-opioid ± Adjuvant

**Pain**



Jordi Perez, MD, PhD  
Director MUHC Cancer Pain Program

Research Article: The McGill University Health Centre Cancer Pain Clinic: A Retrospective Analysis of an Interdisciplinary Approach to Cancer Pain Management

Pain Research and Management 2016

