

# Approaching Pain in End of Life Care

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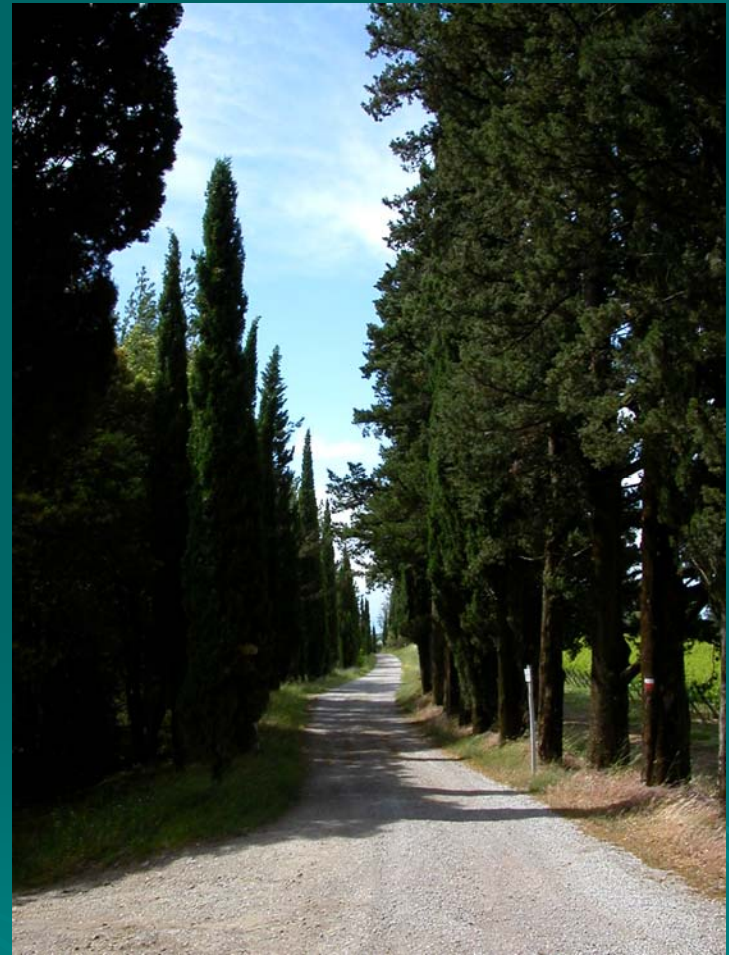
# Objectives

Upon completion of this session, participants will appreciate:

- The unique features in approaching pain in the end of life setting
- The concept of “total suffering”
- The predictors of difficult pain syndrome
- The standard approach in pharmacological and palliative therapy

# The current reality

- 250,000 Canadians will die this year
- Canadians are living longer, Baby Boomers are aging
- 33% more death by 2020



# Prevalence of Pain in Advanced Illness

## ➤ Cancer

- 80-90% of patients, often multiple pains with multiple causes

## ➤ AIDS

- 35-55% of patients, neuropathic pain common

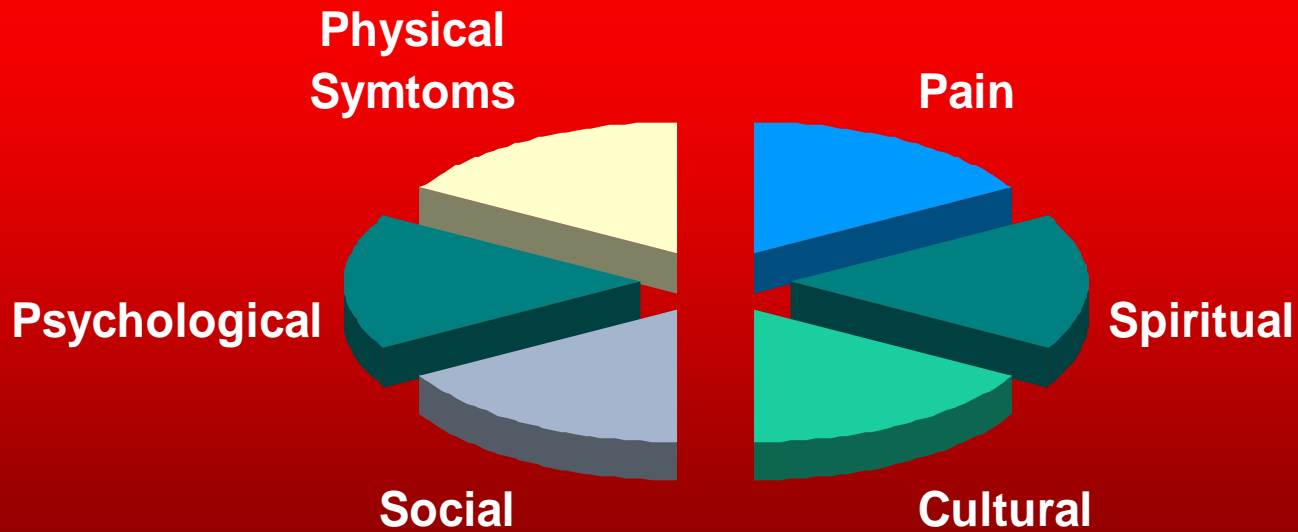
## ➤ End-stage heart disease

- Up to 60% of patients

## ➤ ALS/MS

- 35-60% of patients, neuropathic pain common

# Total Suffering: Woodruff



# How often does pain become refractory in the terminally ill?

	Delirium/ Agitation	Dyspnea	Pain	Nausea/ other
Ventafridda '90	11/63	33/63	<b>31/63</b>	5/63
Burke '90	86/86			
Fainsinger '91	10/16		<b>6/16</b>	
Morita '96	23/69	34/69	<b>27/69</b>	7/69
Fainsinger '00	59/97	25/97	<b>7/97</b>	9/97
Muller-Busch '03	11/80	28/80	<b>2/80</b>	6/80

# Over- and Under-treatment of Pain and Delirium

- Total Suffering Phenomena [Clark: Soc Sci med 1999](#)
- No. of BTA use higher in cognitively impaired than in cognitively intact [Gagnon: JPSM 2001](#)
- In cognitively intact older adults undergoing elective surgery for hip #: less opioid (< 10 mg/d) parenteral morphine (RR 25.2 for delirium), severe pain at rest (RR 9.0)\*
- In cognitively impaired: same as above + meperidine use (RR 3.4) \*[Morrison: J Gerontol Series A 2003](#)

# Pain Syndrome

- Bone pain: the most common type of pain syndrome in cancer (triad: incident + background + spontaneous pain)
- Visceral pain
- Neuropathic pain: known poor prognostic factor for cancer pain tx *Fainsinger: JPSM 2005*
- Incident pain: often associated with bone+neuropathic pain, poor prognostic factor  
*Fainsinger: JPSM 2005*

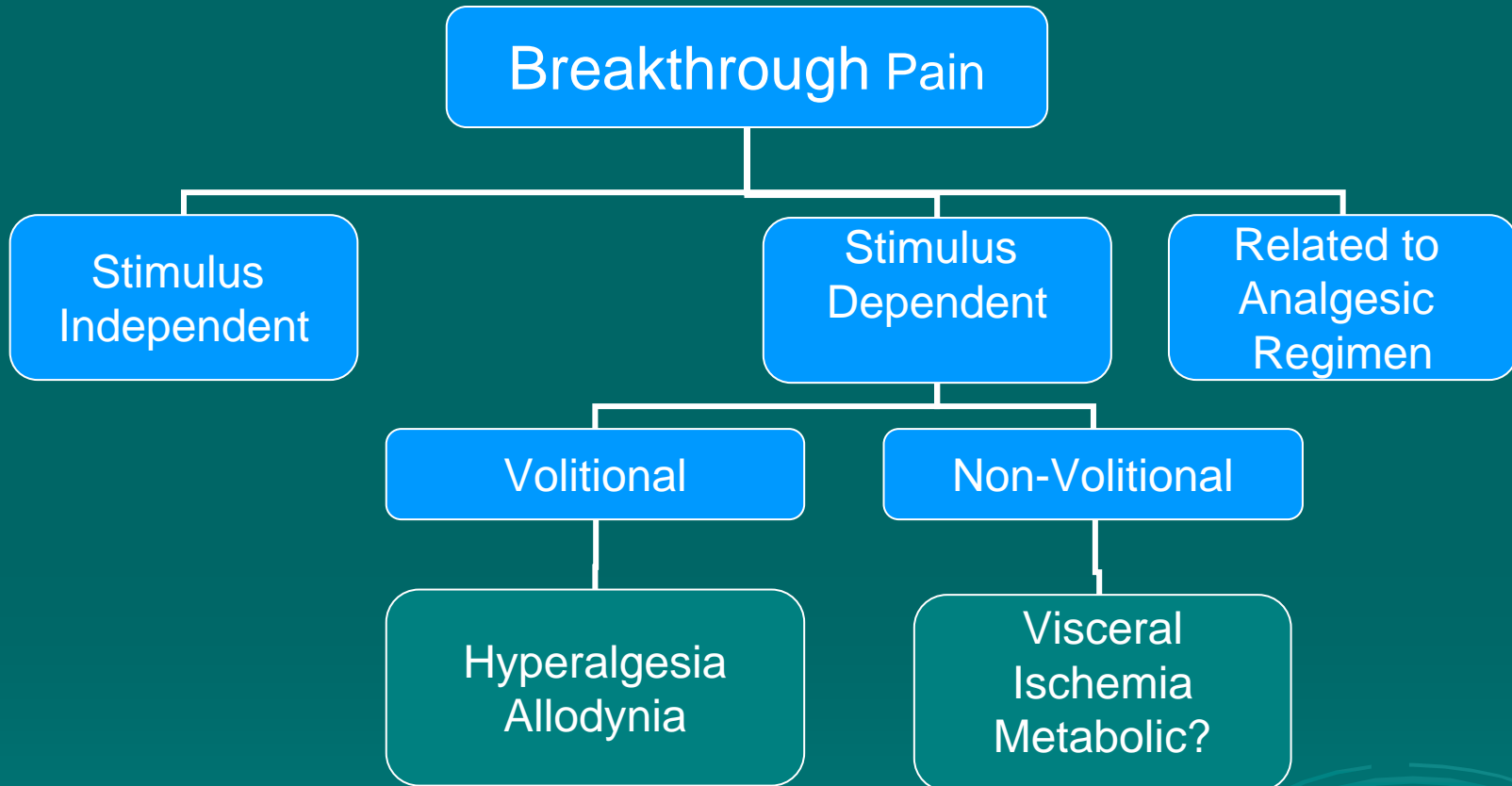
# Diagnostic tests for bone pain

	Sens.	Spec.	Advantage	Disadvtg
Xray	Low	N/A	Low cost Assess pathological # Detects structural change	Delayed appearance
CT	High	High	Evaluates cortical & trabecular bone	Relatively expensive
MRI	High	High	Evaluates spinal cord compression and soft tissue	Expensive
Bone scan	Varies	Low	Detects new lesions Reasonable screening tool	Low specificity
PET	Varies	High	Detects new marrow lesions	Very expensive

# Incidence of bone mets & life expectancy

Type of cancer	Frequency(%)	Life expectancy
Prostate	75-100	53 mo w/o visceral mets
Breast	80	34(1-90) mo
Multiple myeloma	95-100	20 mo
NSCLC+ SCLC	30-40	<1 yr
Renal cell	35	1-2 yr
Bladder	22	1-2 yr

# Current concept of BTP



# Malignant Spinal Cord Compression (SCC)

- Diagnosed in 30% of all patients with disseminated cancer
- Back pain, motor/sensory deficit,
- T-spine
- Autonomic (bowel/bladder) dysfunction: poor prognosis
- 25% multiple SCC – full length MRI\*
- MRI may change 53% RT plan [Br J Radiol 2001\\*](#)

# How to screen?

- History: progressive
- Physical:
  - inspection: gait
  - palpation: vertebral percussion
  - ROM (passive>active)
  - neuro:  
mental+CN+sensation(sharp/position/vibration)  
+strength+reflex+coordination
  - Do rectal!: decreased tonus, wink reflex

# Need more research!

- What is neuropathic pain in palliative population?
- Opioid switch from methadone?
- PO:SC=2:1?
- Should morphine be always first line?
- Pharmacogenetics in opioid response
- Synergic effect of opioid?
- What is really breakthrough pain?
- Opioid dose in impaired renal funct'n



# Cancer-related Pain Management

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# Objectives

- Apply WHO ladder for pain management
- Understand the administration of opioids
- Apply opioid rotation and titration
- Understand basic management of BTAs
- Prevent the adverse effects of opioids
- Address fears and concerns for pt and family

# Approach to Cancer Pain Management

- Assessment
- Address pt/family concerns & expectations
- Set the goal of treatment in a reasonable time frame and options (sleep, ADL, well-being, prognosis etc.)
- Educate regarding the expected ups and downs

# The right dose of opioid= achieve the best analgesia with fewest side effects

- By the cause of the pain
- By the clock
- By the ladder
- By the mouth
- For breakthrough pain
- For the individual
- Adjuvant analgesics as needed
- Prevent adverse effects

# World Health Organization Pain Ladder Cancer Pain Management

Step 3

Step 2

Step 1

Non-opioid +/-  
Adjuvant

Opioid for mild  
to moderate  
pain +/- Non-  
opioid +/-  
Adjuvant

Opioid for  
moderate to  
severe pain +/-  
Non-opioid +/-  
Adjuvant

Address psychological, spiritual issues



# Initiating Opioids

## ➤ Mild to Moderate Pain

- Codeine
- Percocet®, Percodan®, Oxycocet®
- Oxycodone limited by presence of aspirin or acetaminophen

## ➤ Moderate to Severe Pain

- Morphine, HM, Oxy, fentanyl, methadone

## ➤ Do Not Use

- Meperidine
- Buprenorphine, butorphanol, pentazocine, propoxyphene

# Factors to consider when initiating opioids

- Age/frailty
- Cognitive function/ LOC
- Co morbidities
  - Renal function
  - Liver function
- Previous exposure to opioids
- Previous experience with opioids
- Patient's ability to swallow
- Support system

# Is any one opioid “better” than another?

- **Codeine** causes more constipation than other opioids
- **Hydromorphone** is better for elderly patients or pts with renal impairment
- **Oxycodone** or hydromorphone causes less confusion than morphine
- **Fentanyl** causes less nausea
- **Methadone** is better for neuropathic pain
- **Oxycodone** has a special role in bone pain

# Opioid Myths

- “It means the end is near”
- “Opioids causes addiction”
- “Opioids will lose their effectiveness over time, leaving nothing to treat severe pain “at the end””
- “Opioid will make me a zombie or take away my mental capacity”
- “They will stop my breathing”
- “They will shorten my life”

# Adverse Effects

- Constipation
- Nausea
- Somnolence
- Sweating, dry mouth, pruritus
- Respiratory depression
- Opioid neurotoxicity

??? Allergies: ask about the symptoms, food/meds ingested prior

# Constipation

- Constipation: 90% Palliative population  
Robinson 2000
- 87% on opioid, 63% on non-opioid require laxatives tx Sykes 1997
- Sx related constipation: Nausea, Flatulence, Abdominal pain, Anorexia, Hemorrhoids Fallon 1999

# Constipation- impact

- 80% of community nurses spend up to half a day a week treating constipation, 5.5 % of out-of-hours service directly to constipation [Withnell 2000](#)
- 50% of admitted to British hospice [Fallon 1998](#)
- 20-70min/wk of medical time and 55-120min/wk of nursing time dealing with constipated cancer pts [Fallon 1999](#)

# Nausea

## Brain Cortex

GABA

Anxiety, anticipatory nausea

## Labyrinthine App.

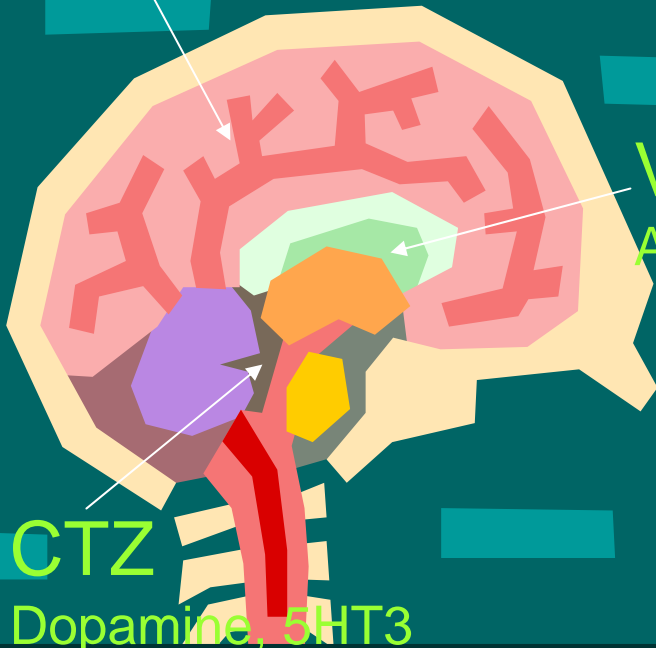
Histamine

Motion induced



## Vomiting Centre

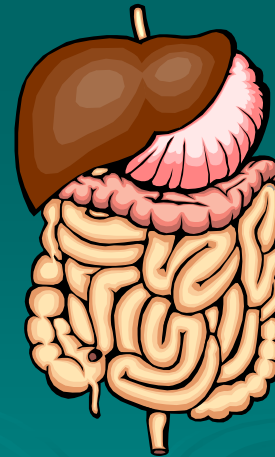
ACH, dopamine



## CTZ

Dopamine, 5HT3

Chemo Tx, Opioids,  
SSRIs, Toxins,  
Biochemical



## GI tract

Dopamine, 5HT3

Tumors

Obstruction

Distention

# Initiating Opioids

## Starting Doses

- Morphine 5 mg q4h po
- Hydromorphone 1 mg q4h po
- Oxycodone 5 mg q4h po
- Fentanyl TDS \*
- Add breakthrough: 10% of total daily dose q1h prn
- Consider small doses in frail, elderly pts

# Pharmacokinetics of Opioids

## ➤ Onset of pain relief

- Oral opioids                      15-30 min
- Sc opioids                        5-10 min
- IV opioids                        3-5 min

## ➤ Duration of pain relief

- Oral opioids                      3-5 hrs
- IV/SC opioids                    2-4 hrs
- Fentanyl TDS                    48-72 hrs

# Titrating the dose of opioid

- Increase the dose by 25 to 50 % if the patient is not achieving adequate pain control
- Take into account number of breakthrough doses taken

# Quiz: administration route

What is the best route of opioid administration?

How should you determine the route of opioid administration?

Which route should you avoid under any circumstances?

# When to consider switching opioids

➤ Imbalance between :

- maintaining analgesic effect

And

- adverse effects

# Opioid Neurotoxicity

## ➤ Increased Risk

- Renal impairment
- High doses of opioids

## ➤ Suggestive signs

- Myoclonus/seizure
- Hallucinations: Visual or Tactile
- Delirium
- Dysethesia / allodynia

# Management of opioid neurotoxicity

## ➤ Management

- Hydration
- Decreasing opioid
- Switching opioid
  
- Opioid antagonist (e.g. naloxone): only effective for narcotization (bradypnea  $RR < 8$ , decreased arousal)

# Opioid Dose Conversion Ratios

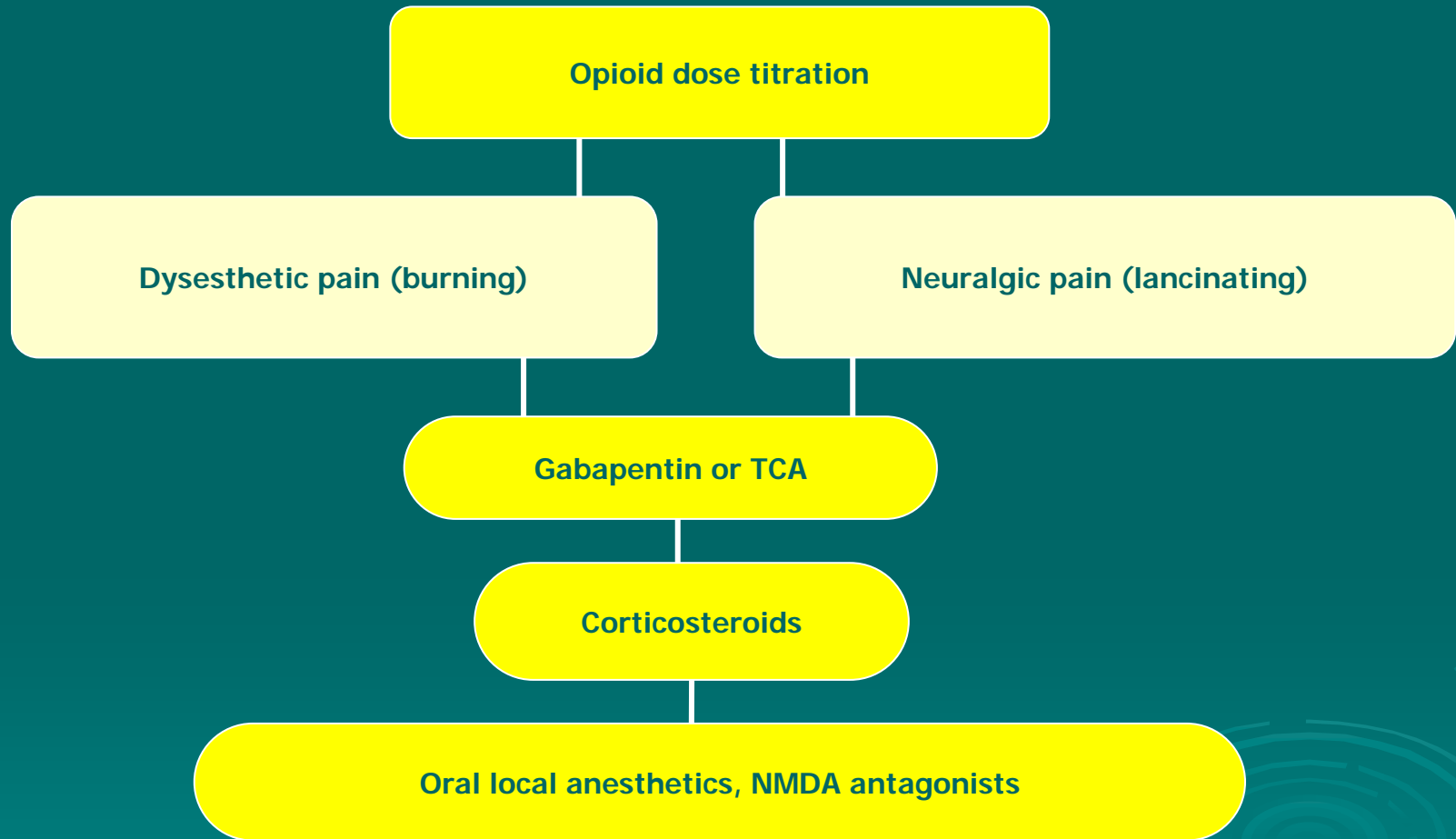
	PO mg	PO:SC	SC mg
Morphine	10	2:1	5
Codeine	100	2:1	50
Oxycodone*	5-7.5	2:1	3
Hydromorphone	2	2:1	1
Methadone**	1	-	-
Fentanyl sc	-	-	0.05
Fentanyl TDS	Use chart supplied by manufacturer		

# Adjuvant analgesics for Bone Pain

- NSAIDs: long term side effects/ benefits
- Corticosteroids: long term benefit/s.e.- need plan
- Radiotherapy: 80% response rate/?onset/?time
- Bisphosphonates: 4-8 wks for response time
- Surgery: prognosis may limit indication
- Calcitonin: low evidence in cancer pain



# Adjuvant analgesics for Neuropathic Pain



# New Adjuvant analgesics for neuropathic pain

	NNT	NNH	Central pain
TCA	3.1	14.7	4.0
CBZ	2.0	21.7	3.4
Gabapentin	4.7	17.8	na
Opioids	2.5	17.1	na
Pregabalin	4.2	11.7	na
Lamotrigine	4.9	na	na

NNT: 50% pain relief NNH: drop out d/t s.e **Pain 2005**

# Adjuvant analgesics for Visceral Pain

- Liver metastases or malignant bowel obstruction
  - Corticosteroids (dexamethasone 2-8 mg qd/bid)
- Colic
  - Hyoscine butyl bromide sc
  - Octreotide





# Case 1

- 52 year old female teacher, lives with supportive spouse
- Hx: postmenopausal breast ca on Arimidex in the last 2 years
- Rapidly progressive pain in the left hip x 2wks, 10/10 on movement, 5/10 at rest
- Tyl #3 ,2 tabs every 2-4 hrs (through the night) x 72 hrs
- Minimum oral intake because of nausea (8/10)
- Feels constipated, last BM 5 days ago
- PHx: HTN, DM diet control, on ACEI, SSRI for many years
- Social drinker, non-smoker, no recreational drug

# How would you approach?

- What's going on?
- What is the next step to be taken?
  - More history, examinations
  - Investigation :
    - Lab
    - Imaging

Working diagnosis?

# Case 1 cont'd

## O/E:

- Somnolent, myoclonic jerks
- When asked, agreed with visual hallucinations
- MMSE 25/30
- Rectal exam: hard stool ++

Lab: normal WBC, Na 133, K 3.1, normal LFT,  
Creatinine 85 umol/L, Alb 38, Ca 3.06

Imaging: Bone Scan/ X ray: wide spread  
metastases to axial bones especially in the  
pelvic lesion, no sign of fracture

# Management Plan

Pain: bone pain:

- Total daily codeine dose= 480 mg
- Equivalent to Mo 48 mg/d (HM 10mg/d)
- Consider short course of steroid
- Referral for oncological management

Delirium: due to hypercalcemia, dehydration & opioid toxicity:

- Hydration+/-bisphos +/-short course haloperidol

Constipation/nausea:

- Treat from both ends: enema/laxatives, prokinetics



# Take Home Points

- Set an individual and realistic goal for treatment within the reasonable time frame and provide logical options.
- Understanding the pathophysiology of the pain syndrome will help with effective management of the pain.
- Be aware of underlying cognitive failure, that can augment the presentation of pain.

# Acknowledgement

- This content was extensively referenced from The Pallium Project, Canada