

# Opioid Pain Management

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## Disclosures

- Dr. Manfredonia discloses his employment as
  - Regional Medical Director for VistaCare
- VistaCare has provided commercial support for this activity
- Palliative medicine frequently involves the use of medications for “off-label” purposes. Such use may be discussed during this presentation.

## Objectives

- ◆ Discuss the types of pain
- ◆ Describe the assessment of pain
- ◆ Describe how to select an opioid medication, including appropriate & effective use of various delivery routes
- ◆ Discuss the management of opioid side effects

...the alleviation of suffering is the warrant of medicine and its test of adequacy...it is a test that contemporary medicine fails despite the brilliance of its science and its awesome technological power.

-Eric J. Cassell

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## GUIDELINES

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- ◆ Assess the Pain
- ◆ Select the appropriate analgesic.
- ◆ Prescribe the appropriate dose.
- ◆ Administer by the appropriate route.
- ◆ Schedule the appropriate dosing interval.

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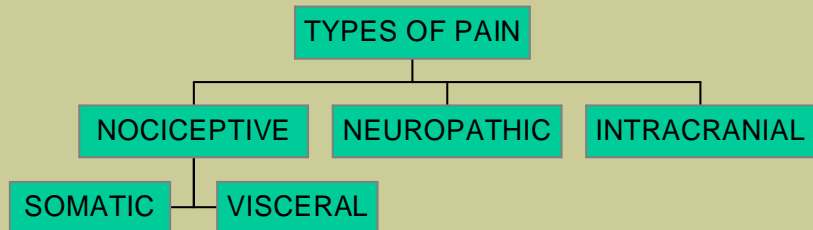
## GUIDELINES.....continued

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- ◆ Prevent persistent pain and relieve incidental or breakthrough pain.
- ◆ Prevent, anticipate, and manage the side effects of the drug.
- ◆ Use appropriate adjuvant drugs.

...When left untreated, pain can cause a patient's **emotional** and *spiritual* death long before the actual end of life.

"Cancer patients in pain:..." Turk, Monarch, Williams



## SOMATIC

- ◆ Etiology
  - ◆ tissue damage / inflammation
- ◆ Symptoms
  - ◆ Aching / Throbbing / Localized
- ◆ Source
  - ◆ Bone / Skin / Joints / Muscle
- ◆ Examples
  - ◆ Bone Mets / Fractures / Arthritis / Cellulitis

## VISCERAL PAIN

- ◆ Etiology
  - ◆ Tumor Involvement...infiltration/compression
  - ◆ Obstruction
- ◆ Symptoms
  - ◆ Colicky / Cramping / Intermittent
  - ◆ Vomiting / Constipation
  - ◆ Poorly localized / Referred
- ◆ Source... “Organs”

## VISCERAL PAIN... obstruction

- ◆ Cause
  - Occlusion of Lumen
  - Lack Of propulsion
- ◆ Etiology
  - Constipation...opioids
  - Colon / Ovarian Cancer
  - Lung... “Ogilvie”

## NEUROPATHIC

- ◆ Etiology
  - Compression / Infiltration / Injury
  - Radiation / Chemo Therapy
- ◆ Symptoms
  - Excruciating / Lancing / Burning
  - Paroxysmal / Intermittent
- ◆ Source
  - Myelopathy / Plexopathy / Radicuopathy
  - Trigeminal Neuralgia / Herpes Zoster

## INTRACRANIAL

- ◆ Etiology...25%
  - ◆ Tumor Compression / Infiltration / Hemorrhage
  - ◆ Increased Pressure / Edema
- ◆ Symptoms
  - ◆ Cephalgia / Focal Weakness / Mental Changes
  - ◆ Seizures / Ataxia / Aphasia
- ◆ Source
  - ◆ Primary
  - ◆ Brain Metastasis...Lung / Melanoma / Breast

## SELECTION OF MEDICATION

- ◆ Assessment of Pain
  - ◆ Intensity
  - ◆ Source
  - ◆ Barriers
- ◆ Types of Formulations
- ◆ Routes of Administration
- ◆ Dosing / Titration
- ◆ Response to Medication

# ASSESSING PAIN

## PAIN SCALE

MILD

1 - 3

MODERATE

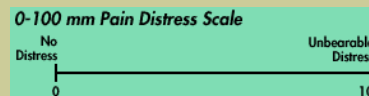
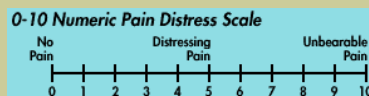
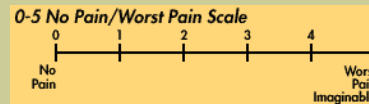
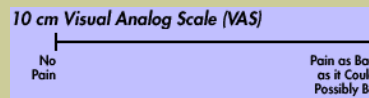
4 - 7

SEVERE

8 - 10

# Scales

Wong-Baker FACES Pain Rating Scale



## Commonly Used Opioids

Drugs	Short-Acting	Long-Acting
Oxycodone	OxyIR® 5,15,30mg 20mg/mL concentrate	OxyContin® 10, 20, 40, 80 mg
Morphine	MSIR® 10,15,30mg 10 & 20mg/5mL soln 20mg/mL concentrate	MSContin® 15,30,60, 100,200mg Kadian® 20,30,50,60,100mg
Hydromorphone	Dilaudid®2,4,8mg,5-10 mg/5mL liq, 3mg supp	Palladone® 12,16,24,32mg
Fentanyl	Actiq® 200, 400, etc.	Duragesic® 25,50,75, 100ugm
Methadone		Methadose® 5,10,40mg + liquid

## Morphine

Route	Onset (minutes)	Peak (minutes)	Duration (hours)	Titration (minutes)
IV	5-10	15-30	3-4	10
SC	10-20	30-60	3-4	10-20
PO	30-60	60-90	3-4	120

## CONVERSIONS

- ◆ Morphine PO : SQ 3 : 1
- ◆ Hydromorphone PO : SQ 5 : 1
- ◆ Morphine to Hydromorphone
  - PO : PO 4 : 1
  - PO : SQ 20 : 1
  - SQ : SQ 4-7 : 1
- ◆ Fentanyl to Morphine
  - 2x Patch Strength = 24hr Morphine Dose
  - Actiq®: 200mcg = 6mg Morphine po

THE MAXIMUM DOSE OF AN  
OPIOID...?

**THERE IS NONE !!!**

## ROUTES OF ADMINISTRATION

- ♦ Oral
- ♦ Rectal
- ♦ Stomal
- ♦ Parenteral
  - Subcutaneous
  - Intravenous
- ♦ Transdermal
- ♦ Epidural / Intrathecal

## ORAL... Advantages

- ♦ Preferred Route
  - Simple / Non-invasive / Flexibility of Dosing
  - Convenient / Highly Effective / Inexpensive
- ♦ Administration
  - Tablet / Liquid / Crushed
  - Short Acting / Long Acting
  - Sublingual

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## ORAL...Disadvantages

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- ◆ Slow Onset of Action
- ◆ Delayed Peak Time
- ◆ Dependent on
  - Patient / Caregiver Compliance
  - Ability to Swallow
  - GI Absorption
- ◆ First Pass Effect

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## RECTAL...Advantages

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- ◆ Alternative to Oral Dosing
  - Nausea / Vomiting / Dysphagia
- ◆ Alternative to Parenteral
- ◆ No Conversion Necessary
- ◆ Emergency Situations

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## RECTAL...Disadvantages

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- ◆ Objectionable to Patient / Family
- ◆ Inconvenience
- ◆ Delayed Onset of Action
- ◆ Local Discomfort
- ◆ Limited Dosage Range / Absorption
- ◆ Spontaneous Expulsion
- ◆ Presence of Feces

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## TRANSDERMAL

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- ◆ Advantages
  - Convenient
  - 48-72 hour duration
  - Less Constipation
  - Allergy to Morphine / Hydromorphone
- ◆ Disadvantages
  - Variable Absorption / Skin Irritation
  - Not Suitable for Rapid Titration (12-16 hours)
  - Caution with Asian patients

# PARENTERAL ANALGESIA

## ♦ Morphine

- First Drug of Choice
- Onset...5-20 minutes
- Titration...10-20 minutes
- Conversion
  - PO to SQ.....3:1
- Parenteral Concentration
  - 10mg/ml to 50mg/ml
- Range of Daily Dose
  - Average...400-600mg
  - 10%.....>2000mg
  - Rare.....20,000mg

## ♦ Hydromorphone

- Alternative to Morphine
- Onset...same as morphine
- Titration...
- Conversion
  - PO to SQ.....5:1
  - Oral Morphine.....20:1
  - SQ Morphine.....4-7:1
- Parenteral Concentration
  - 5mg/ml to 100mg/ml

# PARENTERAL

## ♦ Subcutaneous & Intravenous

### ♦ Indications / Advantages

- Oral / Rectal Route Unavailable
- Rapid Effect
- 100% Bioavailability
- Continuous Infusion

### ♦ Disadvantages

- Greater Expense than Oral Route
- Caregiver / Family must Master Technique

## SUBCUTANEOUS

- ◆ Advantages
  - Onset of Action ...10-20 minutes
  - Greater & Easier Mobility then IV site
  - Duration of Site = 1 week
- ◆ Disadvantages
  - 4 ml / hr limit
  - Localized Pain

## INTRAVENOUS

- ◆ Advantages
  - Rapid Onset of Action...5-10 minutes
  - Peak Effect...15-30 minutes
  - Rapid Titration...every 10 minutes
- ◆ Disadvantage
  - Venous Availability
  - Less Mobility
  - Greater Expense

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## BREAKTHROUGH/INCIDENTAL PAIN

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- ◆ Breakthrough pain is defined as that transient increase in pain that rises to a moderate/severe intensity when the baseline pain is well controlled.
- ◆ Episodic worsening of pain from physical or emotional stressors.
- ◆ Provide rescue doses on these occasions.
- ◆ Ideally, no more than 2 or 3 rescue doses per day.

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## BREAKTHROUGH PAIN... rescue

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- ◆ Provide 10-15% of total 24-hour oral dose every 1-2 hours as needed for pain.
- ◆ Provide 25-50% of the hourly parental dose ( IV / SQ ) every 15-30 minutes

## DOSE ADJUSTMENTS

- ◆ Gradual Escalation until Adequate Pain Control or Intolerable Side-effects
- ◆ When Switching Medication
  - ◆ Decrease by 50-75% with Good Pain Control
  - ◆ Decrease by 0-25% with Inadequate Control
  - ◆ Methadone...reduce by 25%
- ◆ Parenteral...no change necessary

## ESCALATING PAIN

- ◆ Disease Progression
- ◆ Increase in Psychological Stressors
- ◆ Non-compliance by Patient or Caregiver
  - ◆ Assure Appropriate and Timely Delivery
- ◆ Inappropriate Route of Delivery
- ◆ Tolerance to Medication

## SIDE EFFECTS

- ◆ RESPIRATORY DEPRESSION
- ◆ SEDATION
- ◆ CONFUSION
- ◆ CONSTIPATION
- ◆ NAUSEA
- ◆ PRURITIS / RASH
- ◆ URINARY RETENTION

## *Opioid-Induced Neurotoxicity*

- ◆ High Dose / Prolonged Use
- ◆ Renal Insufficiency
- ◆ Excitation
  - ◆ Delirium / Agitation / Myoclonus / Hallucinations / Seizures / Hyperalgesia
- ◆ Sedation / Coma
- ◆ Treatment
  - ◆ Hydration / Dose Reduction / Opioid Rotation

## RESPIRATORY DEPRESSION

- Sedation precedes respiratory depression
  - “No patient has succumbed to (opioid induced) respiratory depression while awake”
- Monitor for reduction of normal respirations
- Caution with Opioid Naïve Patients

## ADVERSE REACTIONS

- ♦ Determine Compliance
- ♦ Assure Appropriate and Timely Delivery
- ♦ Individual Variability
- ♦ Side Effects
  - Reduce Dosage
  - Switch to Alternative Opioid
  - Adjuvant Medication
- ♦ Opioid Dependence....Withdraw

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## Medication Cost

### Professional Pharmacy (5-02-05)

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Equivalent Dose	Cost per month
Palladone® 48mg q d	\$1,100
OxyContin® 80mg q 12h	\$753
Duragesic® 100ug/h	\$644
MSContin® 100mg q 12h	\$356
Methadone 10mg q 12h	\$24
Methadone Liq 10mg/ml	\$120

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## CASE PRESENTATIONS

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## Case 1

46 yo male with head & neck cancer, s/p radical dissection. Present medication includes:

1. Duragesic Patch 100ugm x 3 q 72 hours
2. Oxycontin 20mg 3 q 12 hours
3. Percocet 5/325 (2) q 4 hours
4. MSIR 20mg q2 hours (12 doses in 24 hrs)
5. Ativan and Flexeril.

Patient rates his pain >8/10.

Your approach to pain control in this patient would be?

## Options

1. Continue present regiment and increase until adequate pain control is achieved
2. Convert to one long acting and one short acting medication and adjust accordingly
3. D/C all oral/transdermal medication and convert to parenteral administration.

## Determine total daily dosage

### Morphine Equianalgesic Equivalent Dose

- ◆ Duragesic 300ug/qd.....600mg
- ◆ Oxycontin 20mg iii bid.....120mg
- ◆ Percocet –5 ii q4h..... 40mg
- ◆ MSIR 20mg q2h.....240mg
- ◆ **Total.....1000mg/qd**

## Convert to Parenteral Morphine

- ◆ Total daily dosage is 1000 mg, therefore the parenteral dose would be\_\_\_\_\_?
- ◆ The hourly dose would be\_\_\_\_\_?
- ◆ The adjusted hourly dose would be\_\_\_\_\_?
- ◆ The rescue dose and frequency would be?

## Convert to Parenteral Morphine

- ◆ Total daily dosage is 1000 mg, therefore the parenteral dose would be **333mg**
- ◆ The hourly dose would be **14mg**
- ◆ The adjusted hourly dose would be **10mg**
- ◆ The rescue dose and frequency would be **2.5mg** every 15 minutes

### Case 2

Mrs. W. has metastatic ovarian cancer. She is presently taking 200mg of sustained release oral morphine every 12 hours. She can no longer swallow her medication. Her pain is adequately controlled. The following dose and route of administration would be a reasonable alternative.

- A. Duragesic 100ugm/hr two patches q 72 hours
- B. The same dose and frequency of MS Contin per rectum
- C. Change to MSIR 20mg/ml, 1.75ml q 2 hours po
- D. Methadone Liquid 10mg/ml, 2ml(20mg) q 12 hours
- E. Change to subcutaneous morphine 5mg/hr via continuous infusion pump.

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- E. Change to subcutaneous morphine 5mg/hr via continuous infusion pump.

All of the above are considerations

## Case 3

67 yo male with Rectal Cancer metastatic to bladder and spine. S/P surgical resection with radiotherapy and surgical spinal decompression x 2. Co-morbidities of COPD. Hx of DVT.

Location: Home

Caregiver: Spouse (daughter deceased from over-dose of Oxycontin)

PPS: 40% Ht: 69" Wt: 136 lbs BMI 20

Pain: 4-6/10 Neuropathic...lower extremities

## Medication

- Duragesic Patch 150ugm q 72 h
- Oxycontin 20mg q 12 h
- Endocet 7.5mg (1-2) q 4 h
- Nortriptyline 10mg (2) po at hs
- Coumadin 2mg po qd
- Klonopin 1mg po hs
- Recently D/C: Megace, Decadron, Reglan, Zofran, Macrochantin, Vancomycin (6wks IV)

Your approach to pain control in this patient would be?

## Morphine Equivalent

◆ Duragesic 150ugm/hr	=	300mg
◆ Oxycontin 20mg bid	=	40mg
◆ Endocet 7.5mg	=	60mg ?
Total	=	400mg

### ◆ Day 1

#### ◆ D/C Duragesic / Oxycontin / Endocet

- ◆ Start: Methadone 10mg q 8 h po  
Roxicodone 50mg/ml 40mg q 2 h prn

### ◆ Day 5

- ◆ ↑ Methadone 20mg q 8 h
- ◆ ↑ Roxicodone 60mg q 2 h

### ◆ Day 8 d/c oral meds and change to PCA

- ◆ Morphine 16mg/hr continuous iv with 4mg q 15 minutes prn

### ◆ Day 9

- ◆ ↑ MS 24mg/hr

### ◆ Day 11

- ◆ ↑ MS 50mg/hr

### ◆ Day 12

- ◆ ↑ MS 90mg/hr

### ◆ Day 15

- ◆ ↑ MS 160mg/hr

### ◆ Day 16...develop tolerable myoclonus...discontinue morphine

- ◆ **Change to:** Hydromorphone 36mg/hr with 9mg every 15 minutes prn

### ◆ Day 18

- ◆ ↑ Dilaudid 45mg/hr

### ◆ Day 20

- ◆ ↑ Dilaudid 90mg/hr

### ◆ Day 21...develops myoclonus/hallucinations

- ◆ ↓ Dilaudid 70mg/hr

#### ◆ Add:

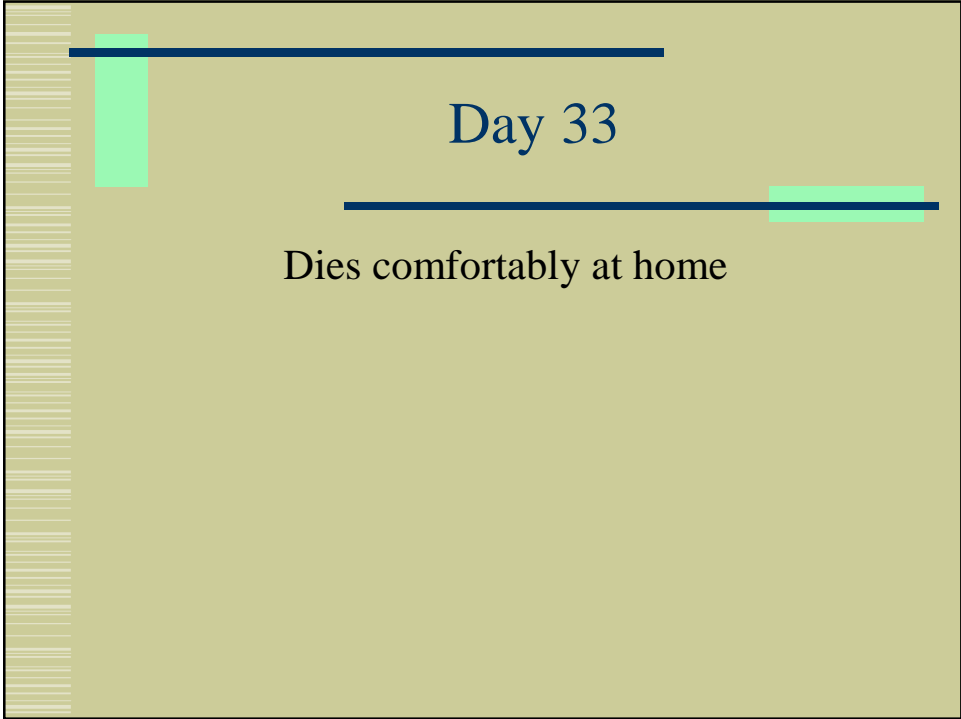
- ◆ Methadone 10mg q 8 h po
- ◆ Depakote 250mg

### ◆ Day 22...hallucinations resolved

- ◆ ↓ Dilaudid 60mg/hr
- ◆ ↑ Methadone 20mg q 8 h

### ◆ Day 23

- ◆ ↓ Dilaudid 40mg/hr
- ◆ ↑ Methadone 40mg q 8 h
- ◆ Depokate 250 mg bid



Day 33

Dies comfortably at home

This slide features a light olive green background with a vertical line of small white dashes on the left side. A dark blue horizontal line is positioned above the text 'Day 33', and another dark blue horizontal line is positioned below it. A light green rectangular block is located on the left side, partially overlapping the top blue line. A second light green rectangular block is located on the right side, partially overlapping the bottom blue line.

Dies comfortably at home



QUESTIONS ?

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